Appendix C
MANHOLE SUMMARY AND REPAIR RECOMMENDATIONS

Introduction to Appendix C

Purpose

The purpose of this introduction is to familiarize the reader with the format and definitions used throughout the following spreadsheets and individual reports.

Inflow and Infiltration

Most of the inflow & infiltration (I&I) seen within the system was observed to come from the sewer structures. Within this report, the defect was denoted based on the volume of groundwater entering the structure. If the volume of I&I within the system was unable to be determined, it was simply denoted as I&I or infiltration. The rating system can be seen below.

Infiltration Type	Detailed Description
Stain	Mineralized section, where there is evidence of infiltration, but no present moisture
Weeper/Seepage	Mineralized section where there is moisture evident, though there is no observable flow
Dripper	A steady drip of water is entering from outside of the asset, can be somewhat intermittent
Runner	A steady stream of water is entering from outside the asset, no lapse in flow
Gusher	A pressurized stream of water is entering from outside the asset, no lapse in flow

Table 2 – Infiltration Notation

Format of Structure Report

The individual structure reports contain two main sections: 'Pipe Characteristics' and 'Manhole Characteristics'. The Pipe Characteristic Section summarizes the size of pipe, direction of flow, pipe material, and cardinal direction the pipe is protruding from. If a pipe was seen to be plugged or heavily deteriorated, it would be labeled as 'out-of-service' or 'abandoned'. This section also lists the depth of flow, however this should not be taken as the average flow volume within the pipe. This value was merely an approximation of flow levels at the time of observation.

The Manhole Characteristic Section contains information about the structural aspects of the structure as well as the pipe connections. Infiltration is documented in the additional comments and illustrated on the depiction. If an element of the system such as 'Barrel' or 'Reducing Slab' does not have a score, that indicates that it is not present within the sewer structure. The same is true for influent/effluent pipe connections.

Appearance of Structures

These manholes were inspected both before and after cleaning. This has the effect of exposing some deterioration that would be hard to observe before cleaning and hiding other defects which were emphasized by mineralization or soils. In addition, many of these inspections were carried out in the rain, making determination of minor I&I difficult. A secondary inspection should be performed before any repairs are conducted, to confirm the results of these reports.

Talkeetna Sewer Structure Summary Table

LOF Grades: *1=No to Minor Defect, 2=Minor Defect, 3=Moderate Defect, 4=Significant Defect, 5=Most Significant Defect*

Structure No.	Max Rim-Invert (in.)	Material Type	Condition of Components													Sewer Drain Structure Observations	Recommended Repairs	Estimated Priority (LOF * COF)
			LOF	COF	Cover	Frame	Chimney	Cone	Reducing Slab	Barrel	Base	Steps	Shelf	Connections (Influent)	Connections (Effluent)			
CO19-001	N/A	Cast Iron	2	1	2	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	- Surface corrosion on frame and lid - Cover's securing bolt is worn	- Reinspect every 5 years	2
CO19-002	N/A	Cast Iron	2	1	2	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	- Surface corrosion on frame lid - Cover's securing bolt is worn	- Reinspect every 5 years	2
CO19-003	N/A	Cast Iron	2	1	1	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	- Cleanout appears to run through tree's roots - Access very restricted due to vegetation	- Excavate attached tree and improve access to cleanout	2
CO19-004	N/A	Cast Iron	2	1	3	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	- Surface corrosion and vegetation on frame and lid - Cover was unable to be opened	- Reinspect every 5 years	2
CO24-001	N/A	Cast Iron	3	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	- Cleanout does not have frame or lid, open air pipe - Within 200 ft of drinking water treatment	- Attach bolted cover to cleanout - Consider relocating further from wells/drinking water treatment plant	6
CO24-002	N/A	Cast Iron	1	2	1	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	- Cover was unable to be opened	-Reinspect every 5 years	2
CO24-003	N/A	Cast Iron	2	1	1	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	- Frame is secured strictly via gravity - Cleanout is located on unstable slope	- Backfill cleanout or relocate to more stable slope - Grout/attach cover to adjoining pipe	2
CO25-002	N/A	Cast Iron	2	1	2	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	- Surface corrosion on frame and lid - Frame to pipe has 1/2" gap	- Fill in gap on frame-lid joint	2
CO25-003	N/A	Cast Iron	2	1	2	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	- Surface corrosion on frame and lid - Large 1" gap between frame and lid	- Fill in gap on frame-lid joint	2
CO25-004	N/A	Cast Iron	2	1	1	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	- Lid and frame are attached despite absence of securing bolt - Frame is secured via just gravity	-Grout/attach cover to adjoining pipe	2
LS-01	224	Pre-cast Concrete	1	2	1	1	3	N/A	2	2	1	1	N/A	1	1	- Spray foam insulation along chimney, rotting wood studs in chimney - No obvious I&I or mineralization - Machinery appears in good condition	- Replace wooden studs lining chimney with stainless steel studs	2
LS-02	152	Pre-cast Concrete	2	3	1	1	2	N/A	2	2	2	1	N/A	2	2	- Pipe connections highly mineralized - Very heavy FOG build-up along walls and machinery before cleaning - No obvious I&I, if present, it's at connections	- Reinspect annually, removing FOG build-up from structure walls when necessary	6
LS-03	270	Pre-cast Concrete	2	3	1	1	2	N/A	1	2	2	2	N/A	2	1	- Unable to vac LS due to closed roof - Base widens out to 10' clearwell - No obvious I&I, minor FOG build-up - 1 ton winch is not properly supported	- Add compressive support column for East side of 1-ton winch - Consider roof access port for future cleanings	6
MH19-0010	106	Pre-cast Concrete	2	1	2	2	2	1	N/A	N/A	3	1	3	N/A	2	- Surface corrosion on frame and lid - Infiltration along South shelf of base - Infiltration at pipe's invert along effluent connection	- Regrout effluent pipe connection and chemical grout to seal I&I - Seal crack on NW base with chemical grout	2
MH19-0011	113	Pre-cast Concrete	2	1	2	2	3	1	N/A	1	2	1	2	1	1	- Surface corrosion on frame and lid - Frame, chimney, and cone have 2" offset - Mineralization at barrel section and base joint	- Seal barrel-base joint with internal joint seal band	2
MH19-0012	99	Pre-cast Concrete	1	1	2	2	N/A	1	N/A	1	1	1	1	1	1	- Surface corrosion on frame and lid	- Reinspect every 5 years	1
MH19-0013	115	Pre-cast Concrete	2	1	2	2	1	1	N/A	1	2	2	2	2	2	- Surface corrosion on frame and lid - I&I dripper at NW section of base	- Seal crack and I&I in NW base with chemical grout	2
MH19-0015	108	Pre-cast Concrete	2	1	2	2	1	1	N/A	N/A	3	2	3	2	3	- Surface corrosion on frame and lid - Infiltration at barrel/base joint -I&I drippers on South section of base	- Seal barrel-base joint with internal joint seal band	2
MH19-0016	126	Pre-cast Concrete	3	2	2	2	N/A	1	N/A	1	4	2	3	2	2	- Surface corrosion on frame and lid - Infiltration at barrel section and base joint -I&I drippers on S, W, and N section of base	- Seal barrel-base joint with internal joint seal band - Clean base, reinspect after several weeks, and regrout any remaining infiltration	6
MH19-0017	138	Pre-cast Concrete	4	2	2	2	1	N/A	2	1	5	3	3	3	4	- Surface corrosion on frame and lid - All pipes are closed & sealed - Multiple I&I gushers on S and W of base - Base is highly corroded - Unclear whether I&I enters the sealed pipes	- Replace manhole	8
MH19-0018	153	Pre-cast Concrete	4	2	2	2	N/A	1	N/A	1	5	2	3	2	2	- Surface corrosion on frame and lid - All pipes are closed & sealed - Multiple I&I gushers on SE and N of base - Unclear whether I&I enters the sealed pipes	- Replace manhole	8

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Structure No.	Max Rim-Invert (in.)	Material Type	Condition of Components													Sewer Drain Structure Observations	Recommended Repairs	Estimated Priority (LOF * COF)
			LOF	COF	Cover	Frame	Chimney	Cone	Reducing Slab	Barrel	Base	Steps	Shelf	Connections (Influent)	Connections (Effluent)			
MH19-0019	153	Pre-cast Concrete	3	3	1	3	N/A	2	N/A	1	3	1	3	2	2	- Surface corrosion on frame and lid - Frame and cone covered in roots Frame and cone have 2" offset - I&I along N and E portions of shelf	- Replace frame and lid on MH - Regrout North and East connections with chemical grout - Seal cracks along East side of base/shelf	9
MH19-0021	124	Pre-cast Concrete	3	2	2	2	1	1	N/A	1	5	2	4	3	2	- Surface corrosion on frame and lid - I&I on all sides from barrel section and base connection Base mineralization up to 1" thick	-Seal barrel-base joint with internal joint seal band	6
MH19-0022	111	Pre-cast Concrete	2	1	2	2	1	1	N/A	N/A	2	2	2	2	1	- Surface corrosion on frame and lid - Infiltration along W side of shelf - Frame, chimney, cone offset of 2" - More steps necessary for access	- Add additional steps so that they reach within 12" of shelf - Seal cone-base joint with internal joint seal band	2
MH19-0023	97	Pre-cast Concrete	3	1	2	2	2	2	N/A	N/A	4	2	4	3	2	- Surface corrosion on frame and lid - Infiltratiration at barrel section and base joint in N, E, and S direction - Missing concrete and crack along N side	- Seal barrel-base joint with internal joint seal band - Seal crack along N side of base with chemical grouting - Clean base, reinspect after several weeks, and regrout any remaining infiltration	3
MH19-0024	107	Pre-cast Concrete	2	1	2	2	N/A	1	N/A	1	3	2	3	2	1	- Surface corrosion on frame and lid - I&I drippers along E and W side - I&I resulting from cracks in base	- Seal cracks in base with chemical grout	2
MH19-0025	97	Pre-cast Concrete	2	1	2	2	2	2	N/A	N/A	1	1	1	1	1	- Surface corrosion on frame and lid - Frame and chimney are 1" offset - Frame, chimney, and cone have moderate roots	- Reattach frame and lid	2
MH19-0026	66	Pre-cast Concrete	2	1	2	N/A	1	N/A	N/A	N/A	2	1	2	N/A	2	- Surface corrosion on frame and lid - Cone and base offset of 1" - Infiltration from cone/base section on W side	- Remove invert and repour sublayer in shelf to give invert a greater slope - Seal cone-base joint with internal joint seal band	2
MH19-0027	141	Pre-cast Concrete	3	2	2	2	3	2	N/A	1	3	2	3	3	2	- Surface corrosion on frame and lid - Chimneys have 6" offset from each other - Chimney and cone have 2" offset - Moderate roots growing at offsets - Infiltration along E side of barrel / base joint	- Replace frame, chimneys, and lid - Regrout influent pipe connection and chemical grout to seal up I&I - Seal barrel-base joint with internal joint seal band	6
MH19-0028	69	Pre-cast Concrete	3	1	2	2	2	2	N/A	N/A	4	2	3	1	3	- Surface corrosion on frame and lid - Frame, chimney, and base have 4" offset - Significant root growth - Large cracks on N and S of base - I&I along entire base/cone joint	- Replace manhole	3
MH19-0029	76	Pre-cast Concrete	2	1	1	1	2	1	N/A	N/A	3	1	3	N/A	2	- Chimney and cone have 4" offset - Root growth at base/cone joint - Infiltration along S side of base	- Remove root growth and seal with cone-base internal joint seal band - Clean and seal crack along SW side of base	2
MH19-0030	98	Pre-cast Concrete	4	1	2	2	1	1	N/A	2	5	1	5	3	2	- Surface corrosion of frame and lid - Very heavy I&I directly at base/shelf connection, especially along E side - Shelf is eroding and cracking	- Replace manhole	4
MH19-0031	109	Pre-cast Concrete	3	1	4	3	4	1	N/A	1	2	1	2	1	2	- Cover and Frame have permanently attached, major corrosion - Chimeny and frame have 4" offset - Significant cracking in chimney - Infiltration along barrel/base joint	- Replace frame, lid, and chimneys - Seal barrel-base joint with internal joint seal band - Clean base, reinspect after several weeks	3
MH19-0032	127	Pre-cast Concrete	2	2	1	1	2	1	N/A	2	3	1	3	3	1	- Chimney, frame, and cone have 2" offset - Infiltration at barrel and base joint - SW section of base has some cracking	- Seal barrel-base joint with internal joint seal band - Seal crack along SW side of base with chemical grouting	4
MH19-0033	110	Pre-cast Concrete	2	2	2	3	N/A	2	N/A	1	2	2	3	1	1	- Surface corrosion of frame and lid - Frame and cone are 6" offset - Significant roots growing in frame - Minor I&I along S side shelf	- Replace frame and lid - Regrout effluent connection and chemical grout to seal I&I - Seal NW shelf with chemical grout	4

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			LOF	COF	Cover	Frame	Chimney	Cone	Reducing Slab	Barrel	Base	Steps	Shelf	Connections (Influent)	Connections (Effluent)			
MH19-0034	107	Pre-cast Concrete	2	1	2	2	N/A	2	N/A	1	3	2	2	1	2	- Surface corrosion of frame and lid - Crack with minor I&I along S side base	- Seal crack along S of base with chemical grouting	2
MH19-0035	122	Pre-cast Concrete	2	2	2	2	2	1	N/A	1	3	1	3	2	2	- Surface corrosion on frame and lid - Infiltration from barrel/base joint - Cracks along E side of base - Chimney has moderate root growth	- Remove root growth and apply a chimney joint seal to prevent further intrusion - Seal cracks in base with chemical grouting	4
MH19-0036	162	Pre-cast Concrete	2	2	2	2	N/A	1	N/A	3	1	2	1	1	2	- Surface corrosion on frame and lid - Infiltration at joint between the two barrels - More steps necessary for access	- Add additional steps so that they reach within 12" of shelf - Seal barrel-barrel joint with internal joint seal band	4
MH19-0037	192	Pre-cast Concrete	1	2	2	2	N/A	1	N/A	1	2	1	2	1	1	- Surface corrosion on frame and lid	- Reinspect every 5 years	2
MH19-0038	218	Pre-cast Concrete	3	3	2	2	1	N/A	1	4	4	2	3	3	2	- Surface corrosion of frame and lid - Significant cracks in barrel - Infiltration through cracks and decommissioned pipe connections	- Replace manhole	9
MH19-005	100	Pre-cast Concrete	1	1	2	2	1	1	N/A	N/A	2	2	1	1	1	- Surface corrosion on frame and lid - Stairs present along opposite walls	- Reinspect every 5 years	1
MH19-006	121	Pre-cast Concrete	1	1	2	2	1	1	N/A	1	2	2	1	1	1	- Surface corrosion on frame and lid	- Reinspect every 5 years	1
MH19-008	110	Pre-cast Concrete	2	1	2	2	1	1	N/A	2	1	2	2	N/A	3	- Surface corrosion on frame and lid - Standing Water - Stairs present along opposite walls	- Remove invert and repoour sublayer in shelf to give invert a greater slope	2
MH19-009	101	Pre-cast Concrete	2	1	2	2	1	1	N/A	N/A	2	2	2	N/A	1	- Surface corrosion on frame and lid - Infiltration at NW barrel section and base joint - I&I dripper along south shelf	- Seal barrel-base joint with internal joint seal band - Regrout effluent pipe connection and chemical grout to seal I&I	2
MH24-001	95	Pre-cast Concrete	1	1	1	1	N/A	2	N/A	1	1	2	1	1	1	-Moderate root growth along cone/barrel	- Reinspect every 5 years	1
MH24-0010	67	Pre-cast Concrete	2	1	2	1	N/A	1	N/A	N/A	2	1	2	N/A	3	- Infiltration along cone/base joint - Pipe connection in very poor condition - Sediment build-up along shelf	- Seal cone-base joint with internal joint seal band - Regrout south effluent connection, chemical grouting to prevent I&I	2
MH24-0011	56	Pre-cast Concrete	1	1	1	2	1	N/A	1	N/A	1	1	2	N/A	2	- Moderate cracks in the base	- Reinspect every 5 years	1
MH24-0012	79	Pre-cast Concrete	3	1	1	1	N/A	2	N/A	2	3	1	4	3	3	- Cracks/fractures in base and shelf - Very exposed pipe connections - Missing Invert w/ I&I coming through - I&I at several points along base	- Replace manhole	3
MH24-0013	101	Pre-cast Concrete	2	2	1	1	1	2	N/A	N/A	3	1	3	2	2	- Inifiltration along base/shelf connection - Moderate cracking in base	- Regrout West connection, chemical grouting to prevent I&I - Seal cracks with chemical grouting	4
MH24-0014	73	Pre-cast Concrete	1	1	1	2	2	1	N/A	N/A	2	1	1	1	2	- Sealant between frame and chimney is peeling	- Reinspect every 5 years	1
MH24-0015	72	Pre-cast Concrete	1	1	1	2	1	1	N/A	N/A	1	1	2	2	2	- Pipe connections in poor connection - Moderate sediment build-up along the shelf	- Regrout all connections, chemical grouting to prevent I&I	1
MH24-0016	106	Pre-cast Concrete	3	3	2	2	2	3	N/A	1	3	2	4	3	2	- Surface corrosion of frame and lid - Significant cracking along chimney/cone joint - Infiltration along base and shelf - Shelf eroding from significant I&I	- Replace manhole	9
MH24-0017	92	Pre-cast Concrete	3	1	2	2	N/A	2	N/A	1	4	1	3	2	3	- Surface corrosion of frame and lid - Root growth along frame and cone - Infiltration coming from cone/base joint - Significant cracking in base	- Seal barrel-base joint with internal joint seal band - Clean frame and cone from root growth and seal with chimney-cone joint seal band - Chemical grout cracks in base	3

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			LOF	COF	Cover	Frame	Chimney	Cone	Reducing Slab	Barrel	Base	Steps	Shelf	Connections (Influent)	Connections (Effluent)			
MH24-0018	93	Pre-cast Concrete	3	1	1	2	3	2	N/A	N/A	3	2	3	N/A	4	- Surface corrosion and broken catchpan - Cracks and crushing in chimney - Missing invert along base allowing significant infiltration - Pipe connection's concrete is eroded	- Replace chimneys and catchpan - Remove invert and repour sublayer to prevent bottom-up I&I - Regrout effluent connection, chemical grout to seal I&I	3
MH24-002	101	Pre-cast Concrete	2	2	1	1	1	1	N/A	1	2	2	2	2	3	- Hairline cracks in base on W side - Infiltration from 4" link seal connection	- Retighten gasket on link-seal connection - Regrout effluent connection with chemical grouting to prevent further I&I	4
MH24-003	75	Pre-cast Concrete	3	2	2	2	2	1	N/A	N/A	3	1	4	3	2	- Surface corrosion of frame and lid - Connections in poor, eroding shape - Shelf is fracturing and eroding - I&I evidence along base/shelf	- Remove invert and repour sublayer - Regrout all connnections, chemical grouting to prevent I&I	6
MH24-004	64	Pre-cast Concrete	1	1	2	2	N/A	1	N/A	N/A	1	1	2	N/A	2	- Surface corrosion of frame and lid	- Reinspect every 5 years	1
MH24-005	62	Pre-cast Concrete	1	2	1	2	N/A	N/A	1	1	2	1	2	2	2	- Moderate decay of shelf - Pipe connections in poor condition	- Regrout all connections, chemical grouting to prevent I&I	2
MH24-006	93	Pre-cast Concrete	2	2	1	2	N/A	1	N/A	N/A	2	2	2	2	2	- Moderate decay of base and cone - Pipe connections in poor condition	- Regrout West connection, chemical grouting to prevent I&I	4
MH24-007	87	Pre-cast Concrete	1	2	2	2	1	1	N/A	1	1	1	2	2	1	- Surface corrosion of frame and lid - Sediment build-up on shelf of base	- Reinspect every 5 years	2
MH24-008	90	Pre-cast Concrete	2	2	2	2	1	2	N/A	1	2	2	3	2	3	- Surface corrosion of frame and lid - Pipe missing invert for 6" - Pipe connections in poor conditions	- Remove invert and repour sublayer, ensuring proper invert coverage - Regrout all connections, chemical grouting to prevent I&I	4
MH24-009	99	Pre-cast Concrete	1	1	1	1	2	1	N/A	N/A	1	2	2	N/A	1	- Sediment build-up along shelf	- Reinspect every 5 years	1
MH25-001	73	Pre-cast Concrete	2	1	1	2	2	1	N/A	N/A	1	2	3	1	2	- Sediment build-up on shelf - Damage to concrete in shelf	- Reinspect every 5 years	2
MH25-0010	92	Pre-cast Concrete	3	1	1	2	1	1	N/A	N/A	3	1	4	3	3	- Infiltration throughout the base - Missing invert at multiple sections - Significant cracks in base	- Remove invert and repour sublayer, ensuring proper invert coverage - Regrout NE connection and crack, chemical grouting to prevent I&I	3
MH25-0011	84	Pre-cast Concrete	2	1	2	2	1	2	N/A	N/A	2	1	2	2	2	- Surface corrosion of frame and lid - Massive sludge build-up before cleaning	- Reinspect every 5 years	2
MH25-0012	102	Pre-cast Concrete	2	3	1	1	3	1	N/A	N/A	1	1	2	1	2	- Moderate cracking in chimney - Sediment build-up along shelf	- Remove reinforcing bars and anchors	6
MH25-0013	81	Pre-cast Concrete	1	2	1	2	N/A	2	N/A	N/A	1	1	1	1	1	- Frame and cone are 1" off-center - Minor cracking along base	- Remove reinforcing bars and anchors	2
MH25-0014	92	Pre-cast Concrete	2	2	1	2	1	2	N/A	1	2	2	2	1	2	- Pipe connections in poor condition - Moderate mineralization along base	- Regrout all connections, chemical grouting to reduce I&I	4
MH25-0015	85	Pre-cast Concrete	2	1	1	2	2	1	N/A	1	3	1	2	4	2	- Pipe connections in very poor condition - Significant cracks along base's circumfrence	- Regrout South connection, chemical grouting to reduce I&I - Seal cracks in base with chemical grout	2
MH25-0016	86	Pre-cast Concrete	2	1	2	2	2	1	N/A	N/A	4	1	2	1	1	- Surface corrosion of frame and lid - Large crack extending through base's North side	- Seal cracks in base with chemical grout	2
MH25-0017	141	Pre-cast Concrete	3	1	1	2	2	2	N/A	2	3	1	4	3	1	- Shelf missing concrete - North connection is eroding and concrete is soft - Missing invert along base fir 6" section	- Remove invert and repour sublayer of shelf - Install beaver slide with full invert coverage from North influent connection	3

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MH25-0018	100	Pre-cast Concrete	1	1	1	1	2	1	N/A	N/A	2	1	2	1	1	- Minor mineralization along shelf	- Reinspect every 5 years	1
MH25-0019	72	Pre-cast Concrete	2	1	2	1	N/A	2	N/A	N/A	2	2	2	2	1	- Root growth between cone and base - Missing invert for 1" section	- Remove existing invert and cut new section to proper length	2
MH25-002	61	Pre-cast Concrete	2	1	2	2	1	1	N/A	N/A	3	1	1	2	3	- Surface corrosion of frame and lid - Significant cracking along base - Pipe connections in poor condition\	- Regrout all connections, chemical grouting to prevent I&I - Seal cracks in base with chemical grout	2
MH25-0021	171	Pre-cast Concrete	1	1	2	2	2	2	N/A	1	1	1	1	1	1	- Surface corrosion of frame and lid - Root growth along chimney and cone	- Seal cone-chimney joint with internal joint seal bands	1
MH25-0022	134	Pre-cast Concrete	2	1	1	1	1	3	N/A	3	2	1	1	1	1	- Significant root growth along cone and barrel	- Install internal joint seal bands along joints between cone, barrel, and base	2
MH25-0023	118	Pre-cast Concrete	2	1	1	2	2	3	N/A	1	1	2	2	1	1	- Significant root growth along cone - Moderate concrete damage along shelf	- Install internal joint seal bands at cone/chimney connection to prevent further root growth	2
MH25-0024	113	Pre-cast Concrete	1	1	1	1	2	1	N/A	1	1	2	1	1	1	- Moderate concrete damage at chimney	- Reinspect every 5 years	1
MH25-0025	72	Pre-cast Concrete	2	1	1	2	1	1	N/A	N/A	2	1	3	2	2	- Standing water present along shelf - Pipe connections in poor conditions - Sediment build-up along pipe's lining	- Remove current shelf, repour shelf sublayer, and install proper invert	2
MH25-0026	76	Pre-cast Concrete	1	1	2	2	1	1	N/A	N/A	2	1	2	2	1	- Surface corrosion of frame and lid - Moderate concrete damage along shelf'	- Reinspect every 5 years	1
MH25-003	89	Pre-cast Concrete	3	2	2	2	2	2	N/A	N/A	3	1	3	3	1	- Surface corrosion of frame and lid - Infiltration along base and cone - Damage to concrete in shelf	- Remove invert and repour sublayer in shelf	6
MH25-004	101	Pre-cast Concrete	3	2	2	2	N/A	1	N/A	N/A	4	2	3	3	3	- Surface corrosion of frame and lid - Infiltration along entire cone/base joint	- Seal cone-base joint with internal joint seal band - Seal cracks in base with chemical grout - Regrout West connection, chemical grouting to prevent I&I	6
MH25-006	64	Pre-cast Concrete	2	1	2	2	2	2	N/A	N/A	2	1	1	N/A	2	- Surface corrosion of frame and lid - Minor spalling in chimney - Sediment build-up along shelf	- Reinspect every 5 years	2
MH25-007	110	Pre-cast Concrete	3	2	2	2	1	1	N/A	N/A	3	1	4	3	1	- Surface corrosion of frame and lid - I&I gusher on East side of North influent connection - Possible infiltration from out-of-use pipe	- Remove invert and repour sublayer of shelf - Regrout North connection, chemical grouting to reduce I&I	6
MH25-009	106	Pre-cast Concrete	2	1	2	2	1	1	N/A	N/A	3	1	2	3	2	- Surface corrosion of frame and lid - Minor infiltration along base - Moderate cracking in base	- Regrout West connection, chemical grouting to reduce I&I - Seal crack with chemical grout	2
MH30-001	119	Pre-cast Concrete	2	3	1	2	3	2	N/A	N/A	1	2	1	1	1	- Frame and chimney are 3" off-center - Significant cracking in chimney	- Replace chimney and frame - Remove reinforcing bars and anchors	6
MH30-002	65	Pre-cast Concrete	2	1	2	2	N/A	1	N/A	N/A	1	2	2	1	1	- Surface corrosion of frame and lid - Missing invert for 6" section	- Place invert in area where concrete is exposed - Remove reinforcing bars and anchors	2

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: CO19-001

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/6/2024 **Inspector(s): Dugan**

General Location Features: 50 ft North of Denali & I St Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Effluent / 8” / Ductile Iron	0”	No Flow
2.			
3.			
4.			
5.			
6.			

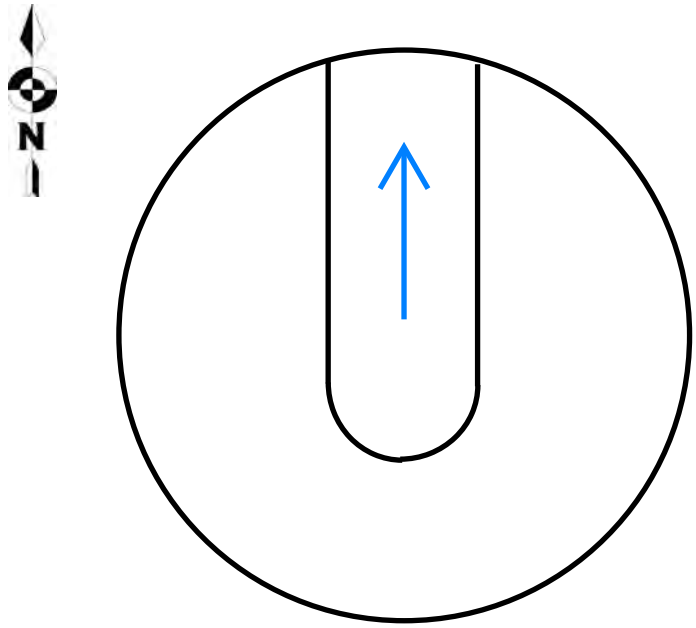
MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Steel
Manhole Shape: Circular
Dimensions: 8”

Cover/Lid: 12”	Type – C.I.	Score – 2
Frame: Height – 1”	Type – C.I.	Score – 1
Chimney: Number/Height – N/A		Score –
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – N/A		Score –
Shelf: Type – Conc.		Score –
Steps: N/A Type:		Score –

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Cover’s securing bolt is stripped and will need specialty equipment to remove
Graded score of 2
Additional Comments:
- Buried, exterior is highly mineralized



Stephl ENGINEERING LLC

Image 1 – CO Facing South

Image 2 – CO Facing North

Image 3 – Cleanout

Image 4 – Cleanout Close-up

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: CO19-002

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: 25 ft North of First St to H St Curve

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Effluent / 8” / Ductile Iron	0”	No Flow
2.			
3.			
4.			
5.			
6.			

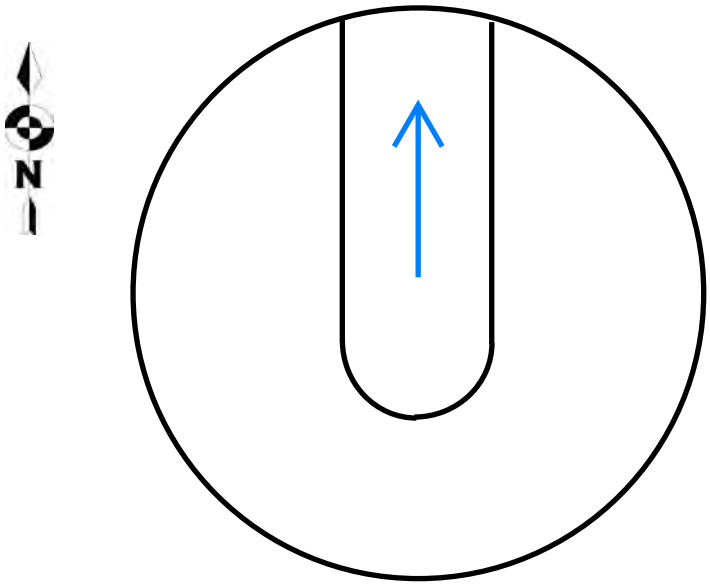
MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Steel
Manhole Shape: Circular
Dimensions: 8”

Cover/Lid: 12”	Type – C.I.	Score – 2
Frame: Height – 1”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – N/A		Score –
Shelf: Type – Conc.		Score –
Steps: N/A Type:		Score –

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Cover’s securing bolt is stripped and interior was unable to be thoroughly inspected
Graded score of 2
Additional Comments:
- Buried, exterior is highly mineralized



Stephl ENGINEERING LLC

Image 1 – CO Facing South

Image 2 – CO Facing North along H St

Image 3 – Cleanout

Image 4 – Cleanout Close-up

Stephl ENGINEERING LLC

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: CO19-003

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: 100 ft North of Gliska & I St, Through a Narrow Easement

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Effluent / 8” / Ductile Iron	0”	No Flow
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 1
Material of Construction: Steel
Manhole Shape: Circular
Dimensions: 8”

Cover/Lid: 12”	Type – C.I.	Score – 1
Frame: Height – 1”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – N/A		Score –
Shelf: Type – Conc.		Score –
Steps: N/A	Type:	Score –

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Cover was unable to be removed
Graded score of 2
Additional Comments:
- Pipe appears to be running directly through a tree’s root system
- Access is extremely restricted due to mass foliage in the way

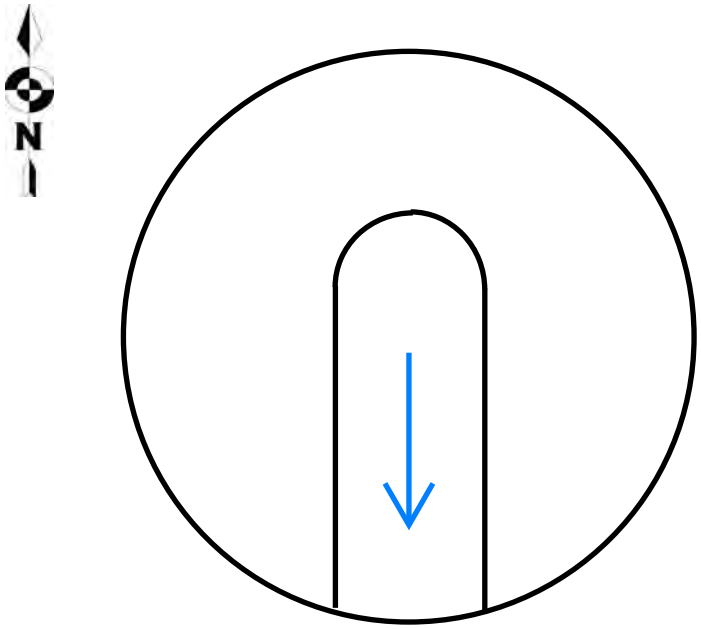


Image 1 – CO Facing West

Image 2 – Easement to Access Cleanout

Image 3 – Cleanout

Image 4 – Cleanout Close-up

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: CO19-004

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: Along Gliska St, 100 ft West of Gliska & Easy St Curve

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	West Effluent / 8” / Ductile Iron	0”	No Flow
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Steel
Manhole Shape: Circular
Dimensions: 8”

Cover/Lid: 12”	Type – C.I.	Score – 3
Frame: Height – 1”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – N/A		Score –
Shelf: Type – Conc.		Score –
Steps: N/A Type:		Score –

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Cover is highly vegetated
Cover was not able to be removed for interior inspection
Graded score of 2
Additional Comments:
- Cleanout is marked with 4ft orange marker

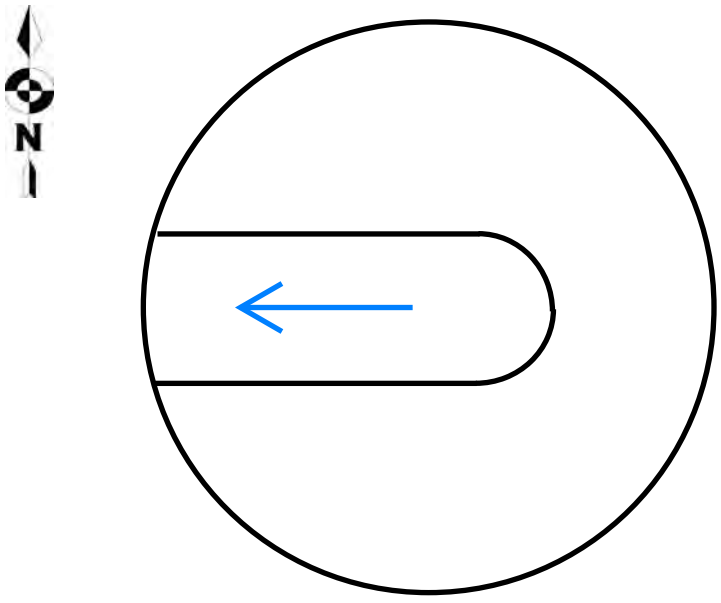


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Image 1 – CO Facing East on Gliska St

Image 2 – CO Facing West on Gliska St

Image 3 – Cleanout

Image 4 – Cleanout Close-up

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: CO24-001

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/6/2024 **Inspector(s): Dugan**

General Location Features: North on C St, 10 ft West of the Talkeetna Drinking Water Treatment Chemical Storage

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Effluent / 6” / Ductile Iron	0”	No Flow
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Steel
Manhole Shape: Circular
Dimensions: 6”

Cover/Lid: N/A	Type – C.I.	Score –
Frame: Height – N/A	Type – C.I.	Score –
Chimney: Number/Height – N/A		Score –
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – N/A		Score –
Shelf: Type – Conc.		Score –
Steps: N/A Type:		Score –

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
No cover or lid on cleanout
Simply an open-air pipe that comes to the surface
Graded score of 3
Additional Comments:
- Minor Hazard: the city’s drinking water wells are within 200 ft of cleanout
- Cleanout does not have cover should it back up

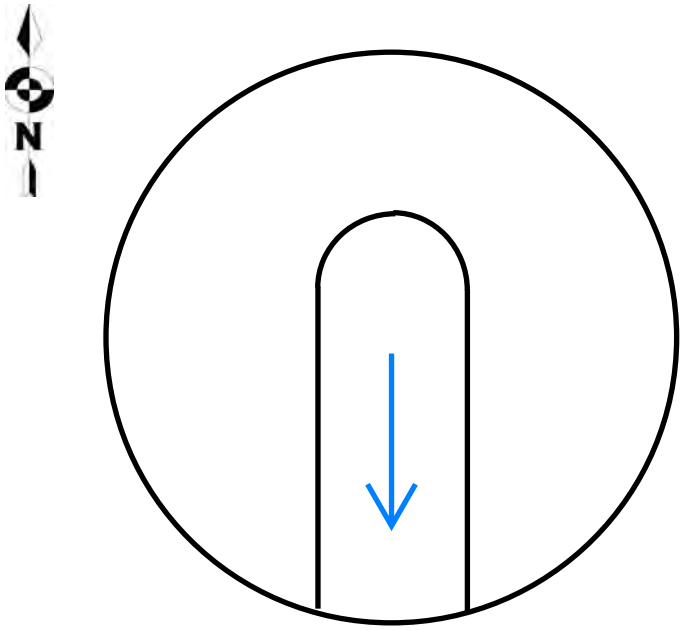

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Image 1 – CO Facing North towards Chemical Storage

Image 2 – CO Facing West behind Fence

Image 3 – Cleanout

Image 4 – Cleanout Close-up

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: CO24-002

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/6/2024 **Inspector(s): Dugan**

General Location Features: Along Talkeetna Spur, 50 ft Northeast of the Talkeetna Post Office

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	Northwest Effluent / 8” / Ductile Iron	0”	No Flow
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 1
Material of Construction: Steel
Manhole Shape: Circular
Dimensions: 8”

Cover/Lid: 12”	Type – C.I.	Score – 1
Frame: Height – 1”	Type – C.I.	Score – 1
Chimney: Number/Height – N/A		Score –
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – N/A		Score –
Shelf: Type – Conc.		Score –
Steps: N/A	Type:	Score –

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Cleanout was unable to be opened
Graded score of 2
Additional Comments:
- Sediment build-up on lid, likely due to being slightly below grade

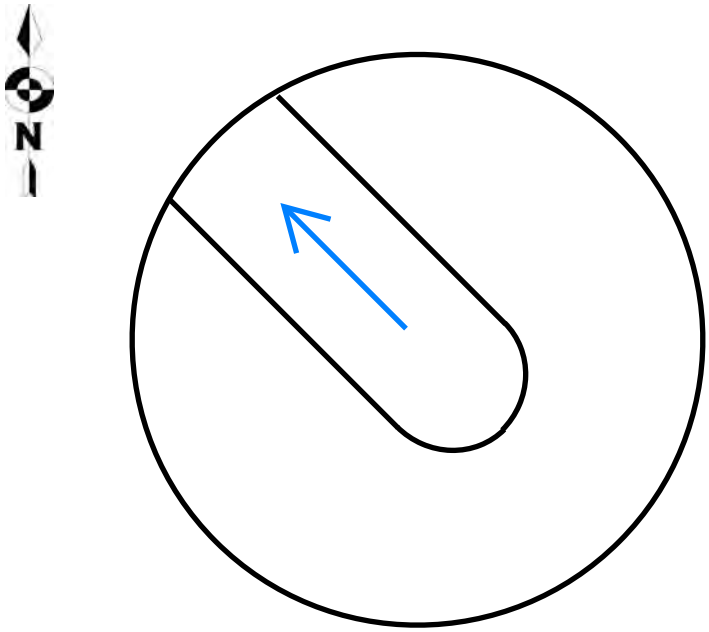

Image 1 – CO Facing Northwest on Talkeetna Spur

Image 2 – CO Facing East

Image 3 – Cleanout

Image 4 – Cleanout Close-up

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: CO24-003

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 5/29/2024 **Inspector(s): Dugan, Markson**

General Location Features: At the dead end of First St, in the Ditch 50 ft West of Talkeetna Spur

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	West Effluent / 8” / Ductile Iron	0”	No Flow
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Steel
Manhole Shape: Circular
Dimensions: 8”

Cover/Lid: 12”	Type – C.I.	Score – 1
Frame: Height – 1”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – N/A		Score –
Shelf: Type – Conc.		Score –
Steps: N/A	Type:	Score –

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Cleanout was unable to be opened, but frame was removed and inspected
Graded score of 2
Additional Comments:
- Frame sits on top of effluent pipe connection, secured strictly via gravity
- Cleanout is exposed roughly 6” above grade, on very erodible surface

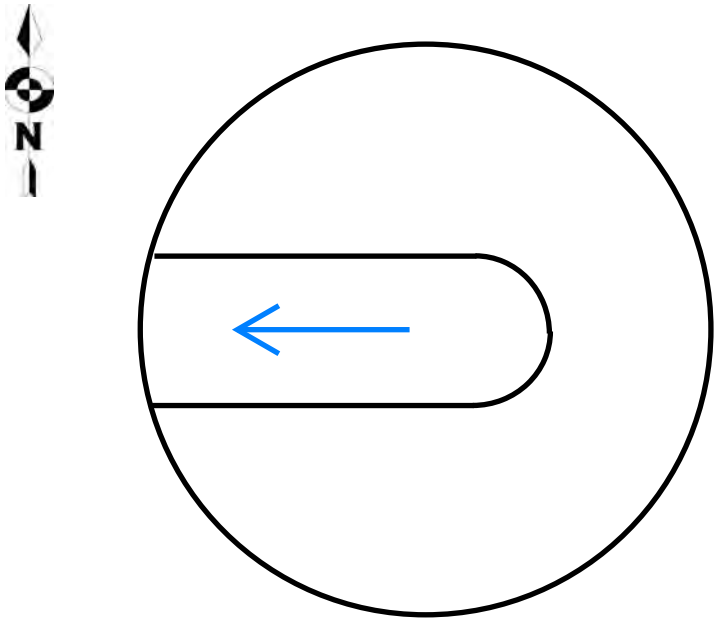

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Image 1 – CO Facing West on First St

Image 2 – CO Facing East towards Talkeetna Spur

Image 3 – Cleanout

Image 4 – Cleanout Close-up

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: CO25-002

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 5/30/2024 **Inspector(s): Dugan**

General Location Features: 100 ft East of Second St & Talkeetna Spur

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	West Effluent / 8” / Ductile Iron	0”	No Flow
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Steel
Manhole Shape: Circular
Dimensions: 8”

Cover/Lid: 12”	Type – C.I.	Score – 2
Frame: Height – 1”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – N/A		Score –
Shelf: Type – Conc.		Score –
Steps: N/A	Type:	Score –

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Frame to pipe connection has significant (1/2”) gap
Graded score of 2
Additional Comments:
- Gap does not appear to be affected by I&I, well above the water table

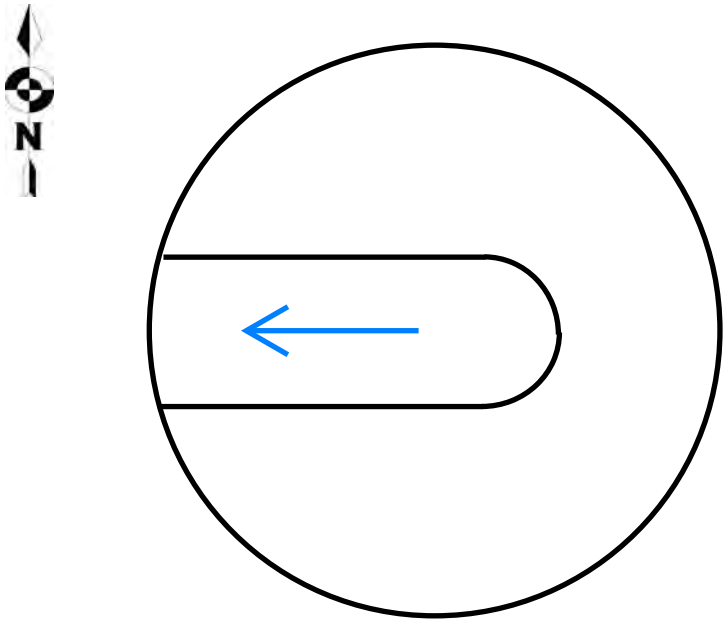

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Image 1 – CO Facing Southwest towards Denali Education Center

Image 2 – CO Facing East towards Talkeetna Spur

Image 3 – Cleanout

Image 4 – Cleanout Close-up

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: CO25-003

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 5/31/2024 **Inspector(s): Dugan**

General Location Features: 100 ft West of Talkeetna Elementary School, Adjacent to Grounded Power Cable

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Effluent / 8” / Ductile Iron	0”	No Flow
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Steel
Manhole Shape: Circular
Dimensions: 8”

Cover/Lid: 12”	Type – C.I.	Score – 2
Frame: Height – 1”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – N/A		Score –
Shelf: Type – Conc.		Score –
Steps: N/A	Type:	Score –

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Large gap between frame and remaining pipe depth
Graded score of 3
Additional Comments:
- Gap appears to be caused by large gouge in one side of pipe, while remainder of pipe is flush

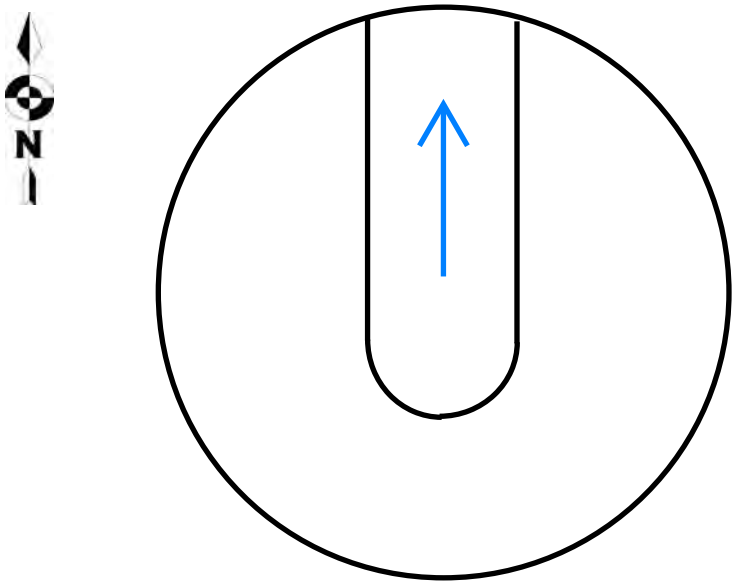

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Image 1 – CO Facing East towards Talkeetna Elementary

Image 2 – CO Facing East

Image 3 – Cleanout

Image 4 – Cleanout Close-up

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: CO25-004

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 5/31/2024 **Inspector(s): Dugan**

General Location Features: 100 ft West of Talkeetna Elementary School, Adjacent to Grounded Power Cable

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Effluent / 8” / Ductile Iron	0”	No Flow
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Steel
Manhole Shape: Circular
Dimensions: 8”

Cover/Lid: 12”	Type – C.I.	Score – 1
Frame: Height – 1”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – N/A		Score –
Shelf: Type – Conc.		Score –
Steps: N/A	Type:	Score –

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Lid and Frame are attached firmly, despite absence of securing bolt
Graded score of 2
Additional Comments:
- Frame is secured via just gravity to protruding pipe

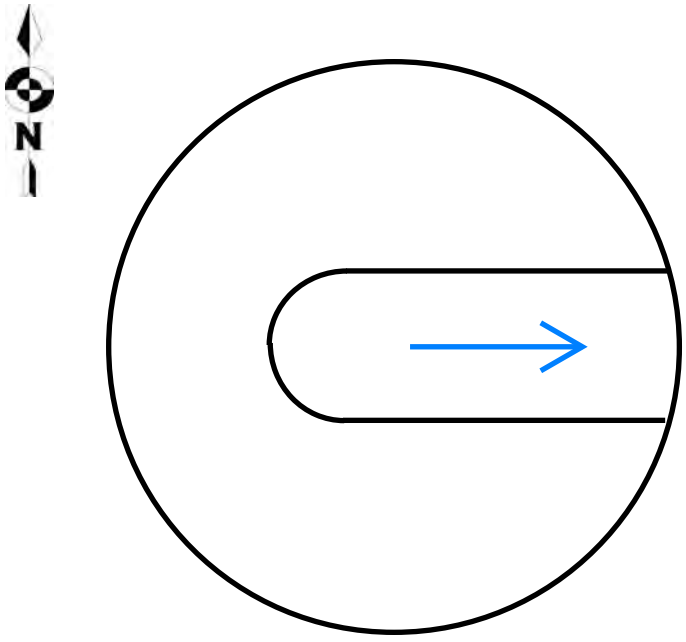

Image 1 – CO Facing South Parallel to Talkeetna Spur

Image 2 – CO Facing Northeast

Image 3 – Cleanout

Image 4 – Cleanout Close-up

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: LS-01

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/1/2024 **Inspector(s): Dugan**

General Location Features: Southeast of Talkeetna Spur & Timber Wolf Loop, Adjacent to Talkeetna Camper Park

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Influent / 8” / Ductile Iron	224”	1”
2.	North Effluent / 8” / Ductile Iron	176”	Closed Pipe System
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 1
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 72”

Cover/Lid: 46” x 46”	Type – Steel	Score – 1
Frame: Height – 3”	Type – Steel	Score – 1
Chimney: Number/Height – 1/6” Wooden		Score – 3
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – 18”		Score – 2
Barrel Sections: Number/Height–1/36”, 1/48”, 1/60”		Score – 2
Base: Height – 60” < b < 84”		Score – 1
Shelf: Type – Conc.		Score –
Steps: 7	Type: Metal	Score – 1

Influent Pipe Connection(s):
Solid grouting
Graded score of 1
Effluent Pipe Connection(s):
Machinery looks solid, minor mineralization
Graded score of 1
Additional Comments:
- Mechanical equipment appears to be in solid condition
- Spray foam insulation sprayed along chimney, appears to be deteriorating the wooden studs
- No mineralization or obvious I&I

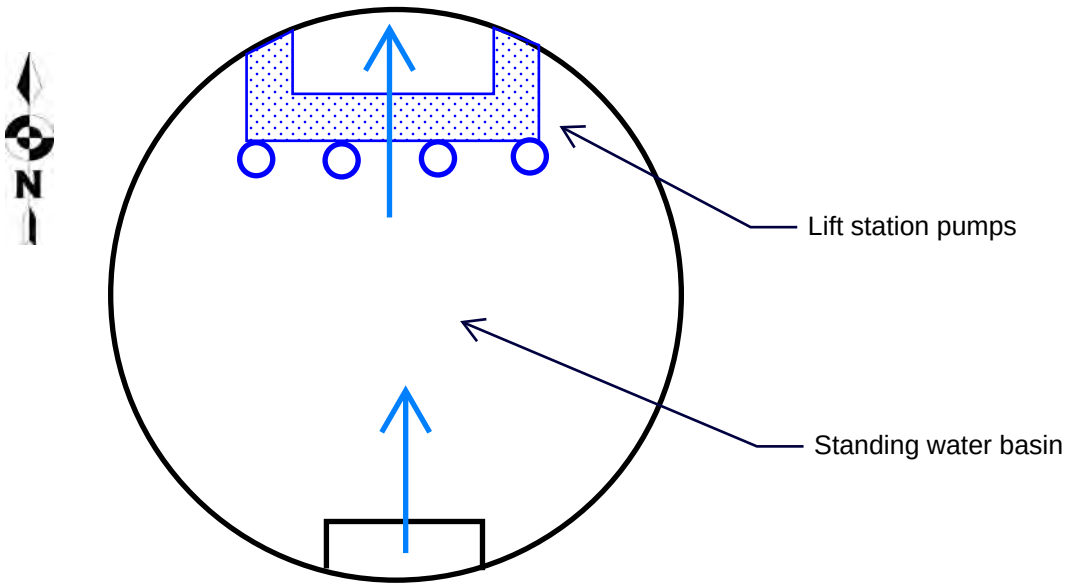

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Image 1 – LS Facing South, Parallel to Talkeetna Spur

Image 2 – Cover, Frame, and Chimney

Image 3 –Wooden Studs & Spray Foam Insulation

Image 4 – Barrels and Base

Image 5 – South Influent Connection

Image 6 – North Effluent Pump Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: LS-02

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: 50 ft West of Third & D St Intersection, on Private Airfield

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Influent / 8” / Ductile Iron	144”	1”
2.	West Influent / 8” / Ductile Iron	152”	2”
3.	East Influent / 8” / Ductile Iron	124”	0.5”
4.	Northeast Effluent / 8” / Ductile Iron	126”	Closed Pipe System
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 72”

Cover/Lid: 51” x 22”	Type – Steel	Score – 1
Frame: Height – 3”	Type – Steel	Score – 1
Chimney: Number/Height – 1/8” Rectangle		Score – 2
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – 18”		Score – 2
Barrel Sections: Number/Height–1/24”, 2/48”		Score – 2
Base: Height – 48” < b < 72” Ecc. Cone		Score – 2
Shelf: Type – Conc.		Score –
Steps: 7	Type: Metal	Score – 1

Influent Pipe Connection(s):
South: Decent grouting, minor mineralization
West: Slightly exposed pipe/gasket, significant mineralization
East: Solid grouting, Significant mineralization on South side
Graded score of 2

Effluent Pipe Connection(s):
Machinery looks solid, minor mineralization
Heavy FOG build-up before cleaning
Graded score of 2

Additional Comments:
- Cover is located on 6’ diameter concrete pad
- Heavy mineralization on steel frame
- Bottom of cover and reducing slab features 8” of insulation
- Before cleaning LS has approx. 8” thick FOG build-up around pumps and sidewalls

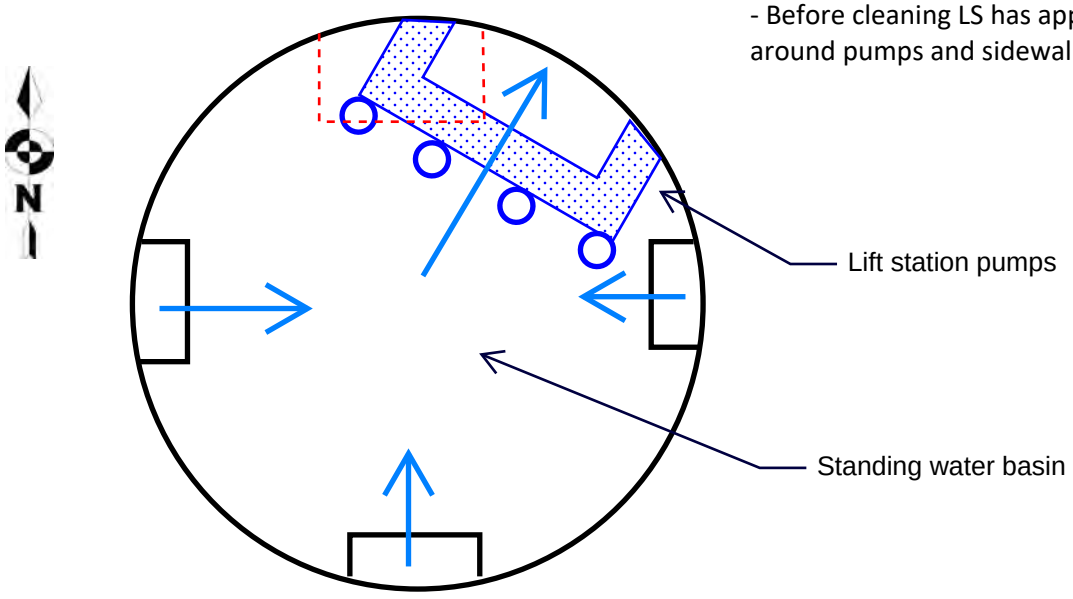

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Image 1 – LS Facing North on Airfield

Image 2 – Cover and Frame

Image 3 –Frame, Reducing Slab, and Barrels

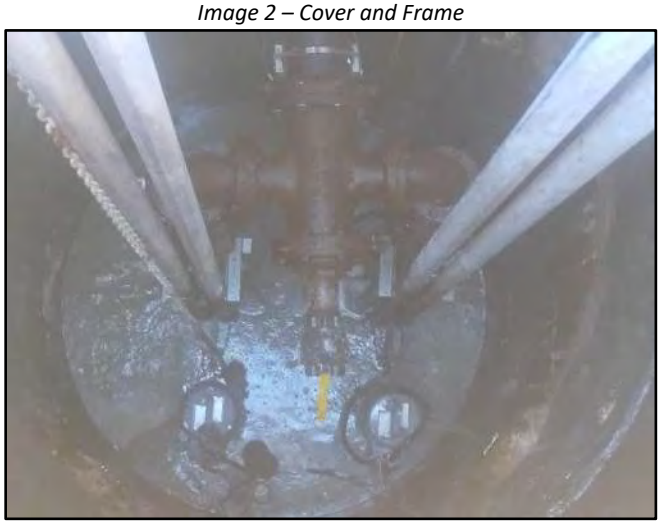

Image 4 – Base

Image 5 – West Influent Connection

Image 6 – East Influent Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: LS-03

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/6/2024 **Inspector(s): Dugan**

General Location Features: Located in the Building West of G & Gliska St Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	East Influent / 8” / Ductile Iron	270”	4”
2.	2x North Effluent / 8” / Ductile Iron	225”	Covered Pipe
3.			System
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 72” → 120”

Cover/Lid: 55” x 40”	Type – Steel	Score – 1
Frame: Height – 2.5”	Type – Steel	Score – 1
Chimney: Number/Height – 1/8” Rectangle		Score – 2
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – 18”		Score – 1
Barrel Sections: Number/Height – 2/72”		Score – 2
Base: Height – 84” < b < 108” Ecc. Cone		Score – 2
Shelf: Type – Conc.		Score –
Steps: 30+	Type: Metal	Score – 2

Influent Pipe Connection(s):
Slightly exposed, no obvious I&I
Graded score of 2
Effluent Pipe Connection(s):
Pumps appear well-sealed and solid
Graded score of 1
Additional Comments:
- Frawner was able to powerwash structure, but unable to vacuum it due to a closed roof
- Base of Lift Station widens out to approximately 10 ft diameter basin
- 2 grout repair sections in top barrel section, both appear solid
- No obvious I&I, nor heavy mineralization
- Biggest Concern: 1 ton winch’s Metal I-Beam does not appear well-supported, hazardous to load to WLL

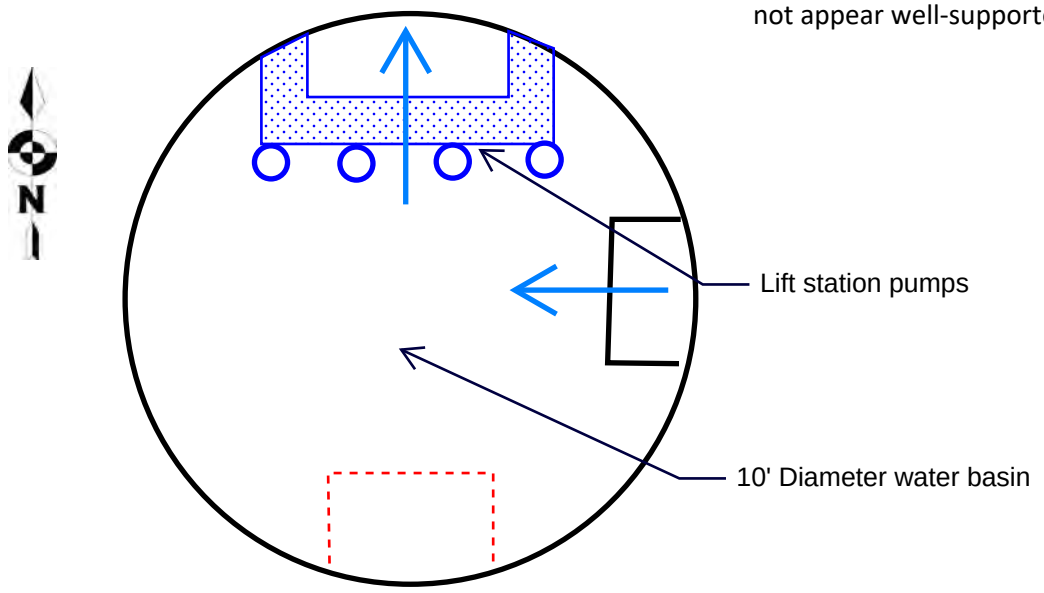

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Image 1 – Lift Station Building Compared with Frawner Vac Truck

Image 2 – Cover and Frame

Image 3 –Barrels and Base

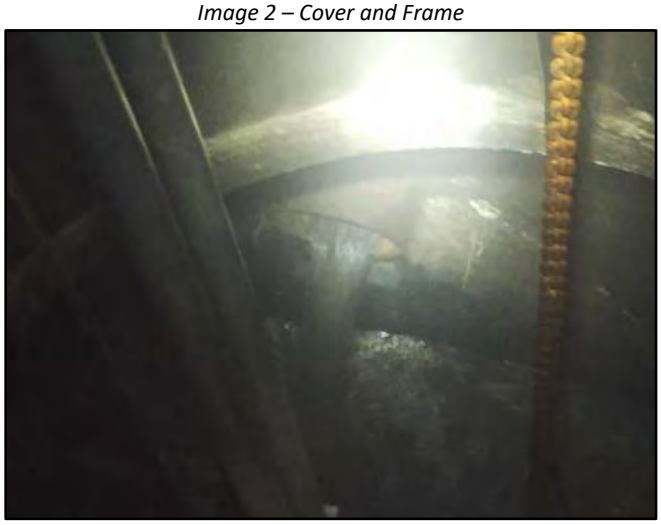

Image 4 – East Influent Connection

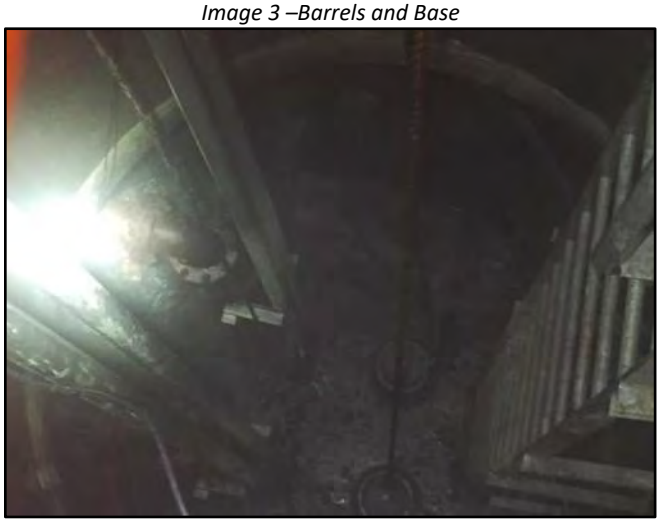

Image 5 – North Effluent Pump Connection

Image 6 – Eccentric Clearwell Base

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-005

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: E Gliska St & S I St Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Influent / 8” / Ductile Iron	100”	0.5”
2.	East Influent / 8” / Ductile Iron	100”	1.0”
3.	West Effluent / 8” / Ductile Iron	100.5”	1.5”
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 1
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/6”		Score – 1
Cone: Height – 52”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – 26”		Score – 2
Shelf: Type – Conc.		Score – 1
Steps: 4	Type: Metal	Score – 2

Influent Pipe Connection(s):
Solid Grouting
Grade Score of 1
Effluent Pipe Connection(s):
Solid grouting
Grade score of 1
Additional Comments:
- Pipe directions are rotated approximately 45 degrees from Cardinal Directions
- Steps are present along opposite sides of MH
- Surface corrosion on frame and lid

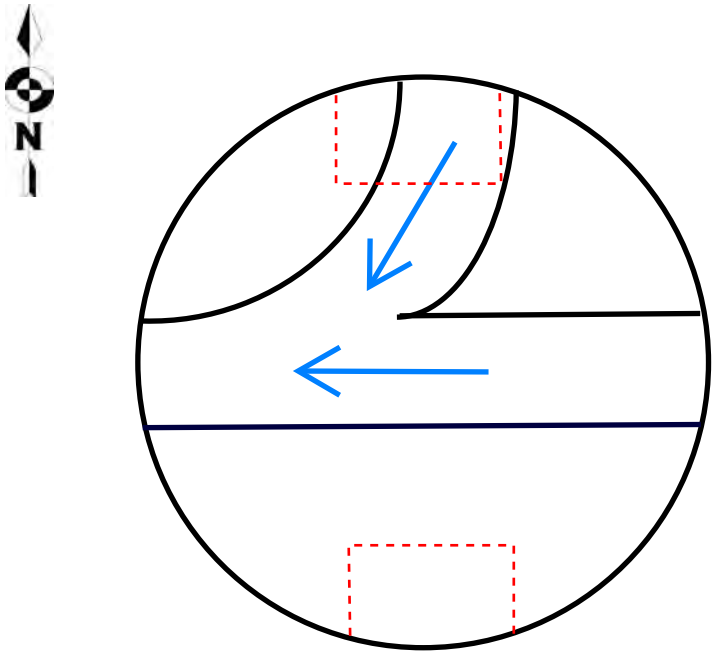

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Image 1 – MH looking South on I St

Image 2 – Frame, Lid and Catchpan

Image 3 – Base

Image 4 – East Influent Connection

Image 5 – West Connection

Image 6 – Chimney & Cone

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-006

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/5/2024 **Inspector(s): Dugan**

General Location Features: 200 ft West of Gliska & I St in the South Ditch

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	East Influent / 8” / Ductile Iron	121.8”	0.5”
2.	West Effluent / 8” / Ductile Iron	122”	0.5”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 1
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/6”		Score – 1
Cone: Height – 40”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/36”		Score – 1
Base: Height – 24”		Score – 2
Shelf: Type – Conc.		Score – 1
Steps: 8 Type: Metal		Score – 2

Influent Pipe Connection(s):
Solid Grouting
Grade Score of 1
Effluent Pipe Connection(s):
Solid grouting
Grade score of 1
Additional Comments:
- MH is in very clean, ideal condition even before cleaning
- Surface corrosion on frame and lid

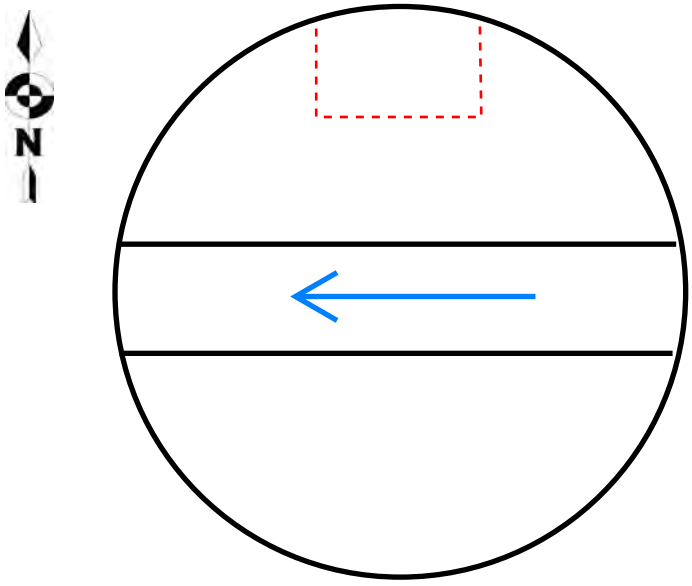

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Image 1 – MH facing West

Image 2 – Frame and Chimney

Image 3 – Chimney, Cone, and Stairs

Image 4 – Base

Image 5 – Base and Cone

Image 6 – Stairs

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-008

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/5/2024 **Inspector(s): Dugan**

General Location Features: 100 ft South of H St & Gliska St Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Effluent / 8” / Ductile Iron	109.5”	1”
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/6”		Score – 1
Cone: Height – 28”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/36”		Score – 2
Base: Height – 26”		Score – 1
Shelf: Type – Conc.		Score – 2
Steps: 7 Type: Metal		Score – 2

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Missing Grouting
Gasket Exposed
Grade score of 3
Additional Comments:
- Stairs present along both East and West wall
- Water within the pipe is static, standing water

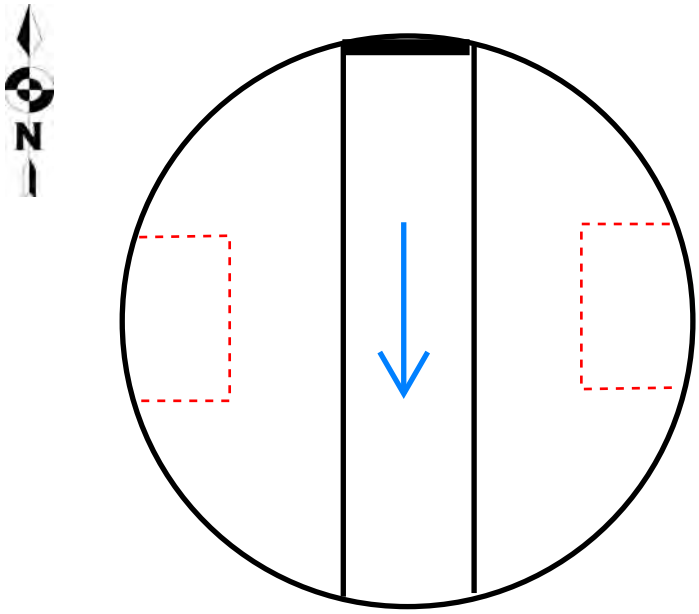

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Image 1 – MH facing North towards intersection

Image 2 – Frame, Catchpan and Cover

Image 3 – Base

Image 4 – South Effluent Connection

Image 5 – Base and Barrel

Image 6 – Standing Water

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-009

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: 100 ft South of I St & Gliska St Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Effluent / 8” / Ductile Iron	101”	Minimal
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/6”		Score – 1
Cone: Height – 52”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – 28”		Score – 2
Shelf: Type – Conc.		Score – 2
Steps: 6 Type: Metal		Score – 2

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Solid, well grouted
I&I nearby, possible related
Grade score of 1
Additional Comments:
Possible I&I Drippers from Shelf of Base along South wall
Mineralized flowlines from base/cone joint along Northwest section

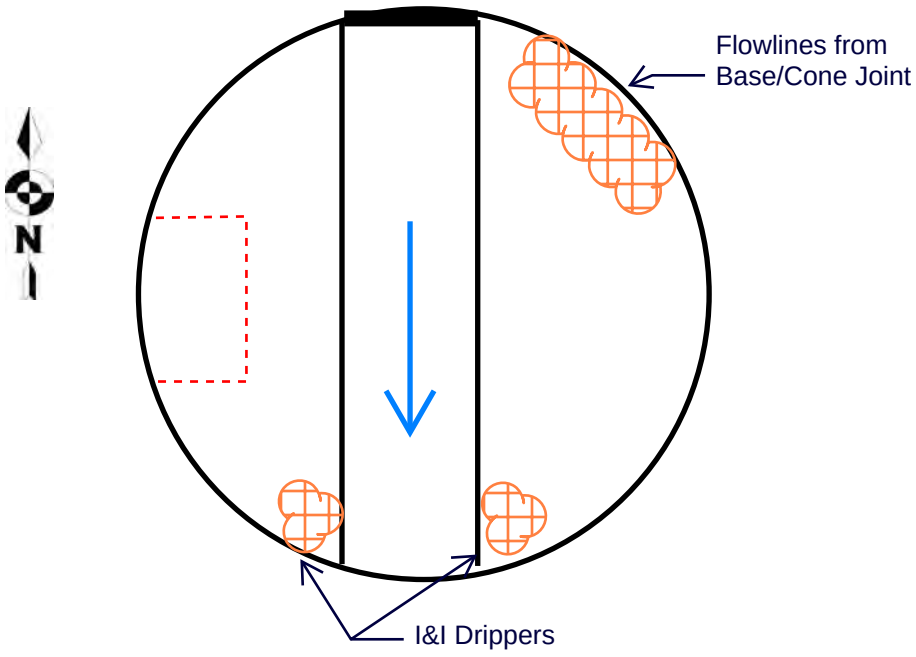

Image 1 – MH facing South along I St

Image 2 – Frame, Catchpan and Cover

Image 3 – Base

Image 4 – South Effluent Connection

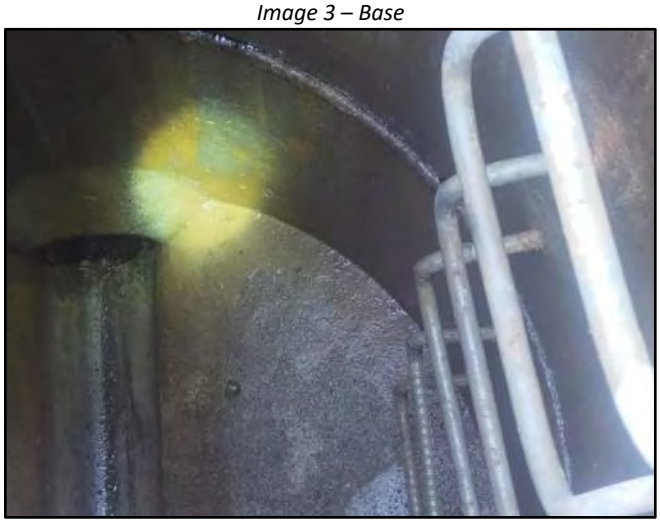

Image 5 – Mineralization

Image 6 – Flowlines from Cone/Base Joint

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0010

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: Along the curve between S Easy St & E Gliska St

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Effluent / 8” / Ductile Iron	106”	0.25”
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/6”		Score – 2
Cone: Height – 52”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – 36”		Score – 3
Shelf: Type – Conc.		Score – 3
Steps: 6 Type: Metal		Score – 1

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Top grouting looks solid, good condition
I&I runners present on both sides, possibly related
Grade score of 2
Additional Comments:
- I&I present along south side on base’s shelf
- Pipe’s invert appears to be gushing right at the effluent connection
- All water flowing from the pipe is I&I

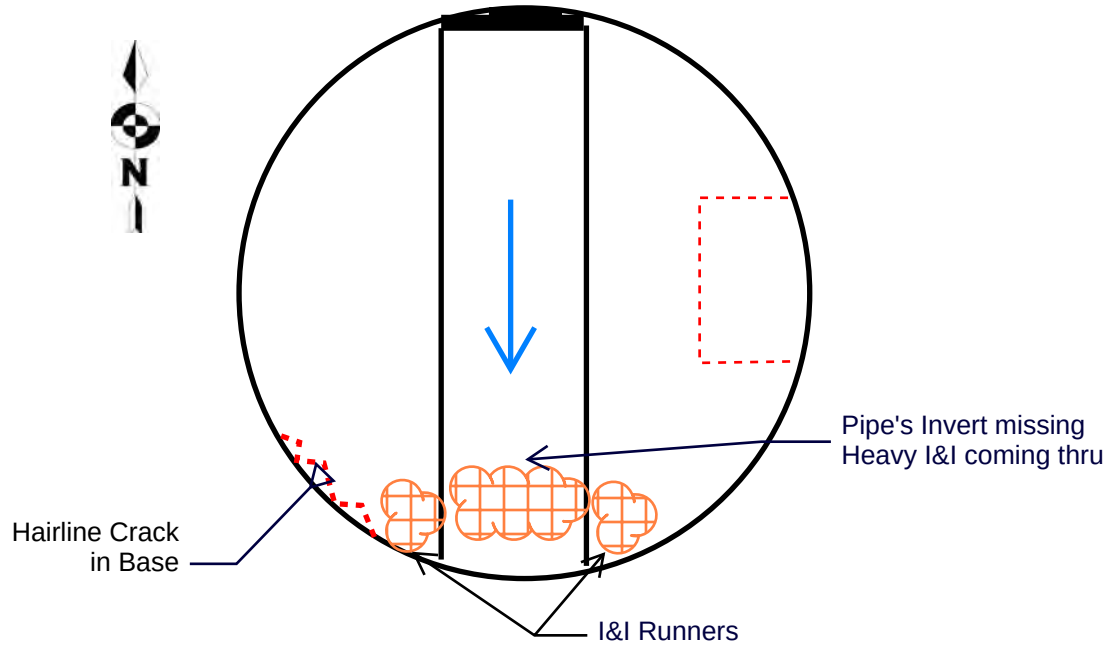

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Image 1 – MH facing North along Easy St

Image 2 – Frame, Catchpan and Cover

Image 3 – Chimney and Cone

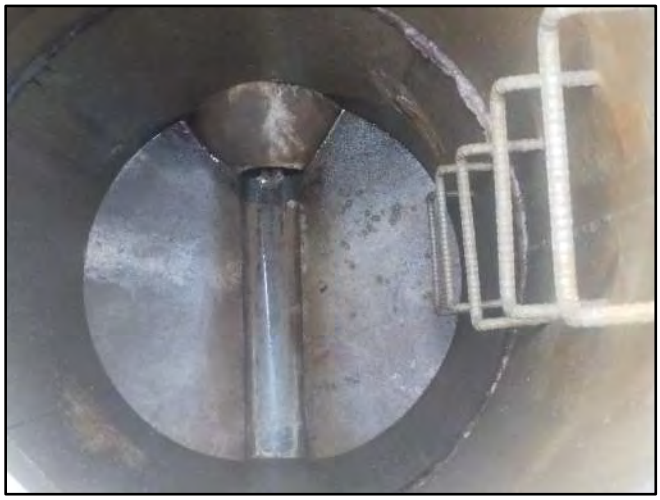

Image 4 – Base

Image 5 – I&I runner along West Side, Crack

Image 6 – I&I runner along East Side, Mineralization

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0011

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/3/2024 **Inspector(s): Dugan**

General Location Features: 200 ft South of Easy St & Gliska St Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Influent / 8” / Ductile Iron	112.8”	1”
2.	South Effluent / 8” / Ductile Iron	113”	1”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/6”		Score – 3
Cone: Height – 28”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 36”		Score – 1
Base: Height – 30”		Score – 2
Shelf: Type – Conc.		Score – 2
Steps: 7 Type: Metal		Score – 1

Influent Pipe Connection(s):
Very extended, solid grouting
Grade score of 1
Effluent Pipe Connection(s):
Solid grouting
Grade score of 1
Additional Comments:
- Chimney has significant vertical cracks
- Frame/Chimney Offset: 0.5”
- Chimney/Cone Offset: 1”
- Evidence of I&I along barrel/base joint

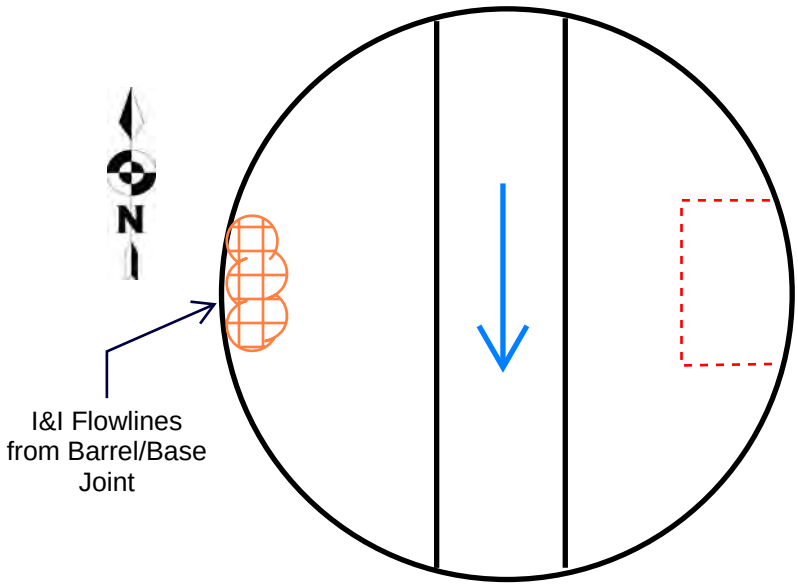

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Image 1 – MH facing North along Easy St

Image 2 – Frame, Catchpan and Cover

Image 3 – Chimney Cracking

Image 4 – Base

Image 5 – I&I flowlines along West Side

Image 6 – Frame, Chimney, and Cone Offsets

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0012

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: 250 ft South of Gliska & I St ntersection, 25 ft SW of Abandoned Shed

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Influent / 8” / Ductile Iron	99.3”	minimal
2.	South Effluent / 8” / Ductile Iron	99.5”	minimal
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 1
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – 40”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/24”		Score – 1
Base: Height – 20”		Score – 1
Shelf: Type – Conc.		Score – 1
Steps: 7	Type: Metal	Score – 1

Influent Pipe Connection(s):
Solid grouting
Grade score of 1
Effluent Pipe Connection(s):
Very extended, Solid grouting
Grade score of 1
Additional Comments:
- Some standing moisture as pipe was just cleaned
- Minimal I&I evidence

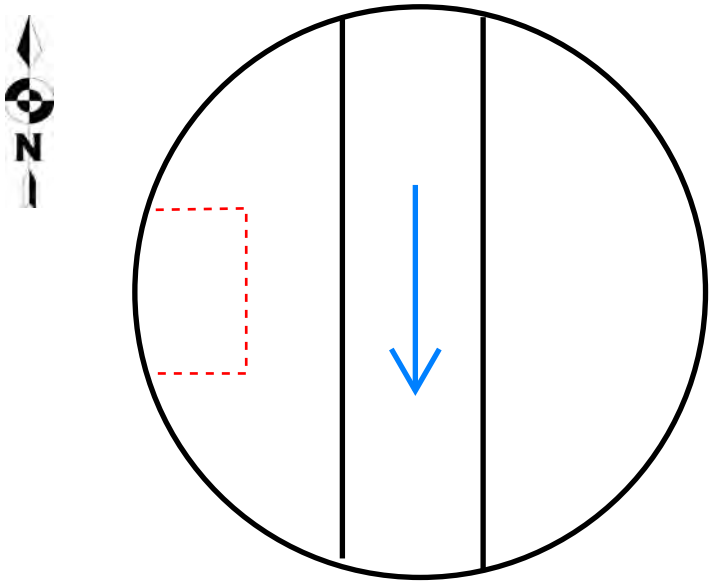

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Image 1 – MH facing North along I St

Image 2 – Frame, Catchpan and Cover

Image 3 – Barrel and Base

Image 4 – South Effluent

Image 5 – North Influent

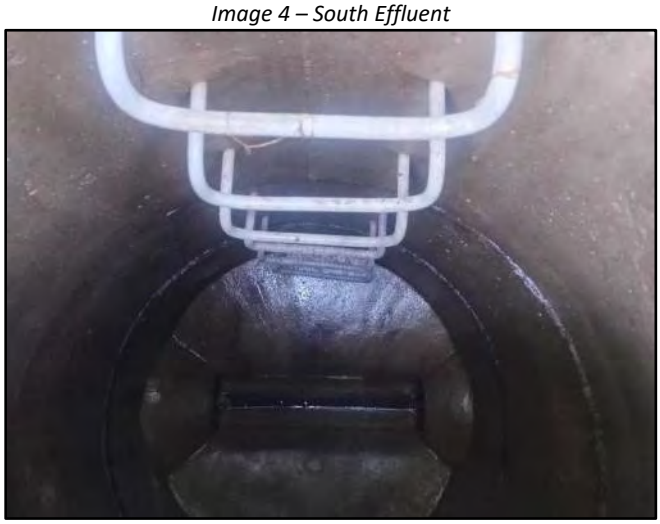

Image 6 – Cone, Stairs and Base

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0013

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/5/2024 **Inspector(s): Dugan**

General Location Features: 200 ft North of H & Front St

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Influent / 8” / Ductile Iron	115.3”	0.5”
2.	South Effluent / 8” / Ductile Iron	115.5”	0.5”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/6”		Score – 1
Cone: Height – 28”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/36”		Score – 1
Base: Height – 30”		Score – 2
Shelf: Type – Conc.		Score – 2
Steps: 7	Type: Metal	Score – 2

Influent Pipe Connection(s):
Well grouted, I&I does not appear to be directly related to connection
Grade score of 2

Effluent Pipe Connection(s):
Decent grouting/coverage
Grade score of 2

Additional Comments:
- Mineralization / I&I dripper in Northwest portion of base
- Difficult to determine extent of infiltration due to inspection occurring during rainstorm

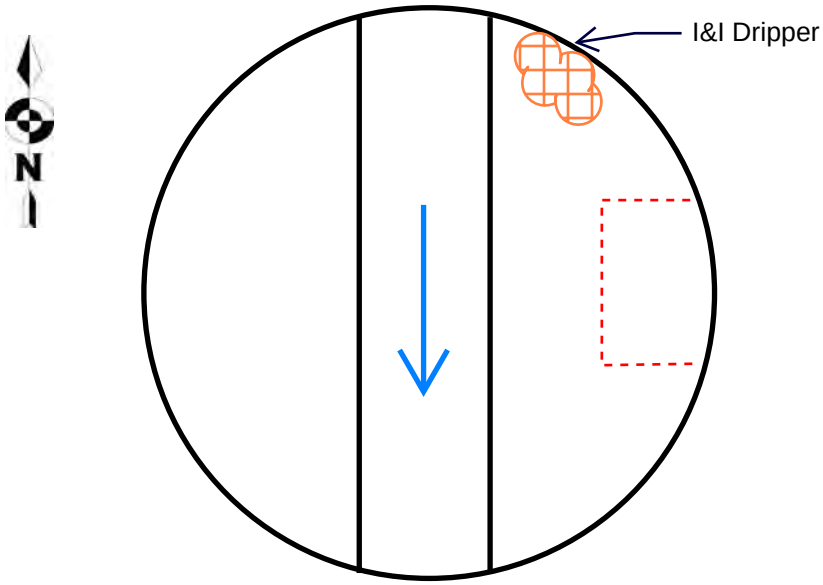

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Image 1 – MH facing South along H St

Image 2 – Frame, Catchpan and Cover

Image 3 – Chimney, Cone, and Stairs

Image 4 – Base

Image 5 – I&I Dripper to the West of North Connection

Image 6 – South Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0015

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/3/2024 **Inspector(s): Dugan**

General Location Features: 200 ft North of Easy St & Front St

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Influent / 8” / Ductile Iron	108.3”	0.5”
2.	South Effluent / 8” / Ductile Iron	108.5”	0.5”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/8”		Score – 1
Cone: Height – 28”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – 36”		Score – 3
Shelf: Type – Conc.		Score – 3
Steps: 6	Type: Metal	Score – 2

Influent Pipe Connection(s):
Very mineralized
Solid grouting coverage
Grade score of 2

Effluent Pipe Connection(s):
Very mineralized
Dripper along the East side possibly related to connection
Grade score of 3

Additional Comments:
- Mineralization / flowlines from cone/base joint on SW side of structure
- Standing moisture present along west shelf

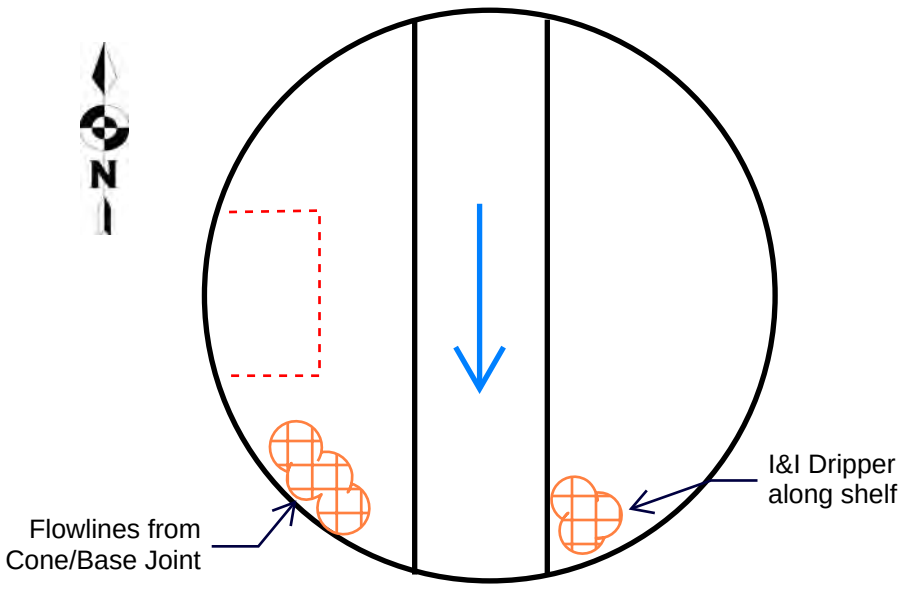

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Image 1 – MH facing North along Easy St

Image 2 – Cone and Base

Image 3 – Dripper along East side of South Connection

Image 4 – Flowlines along SW Base

Image 5 – North Connection

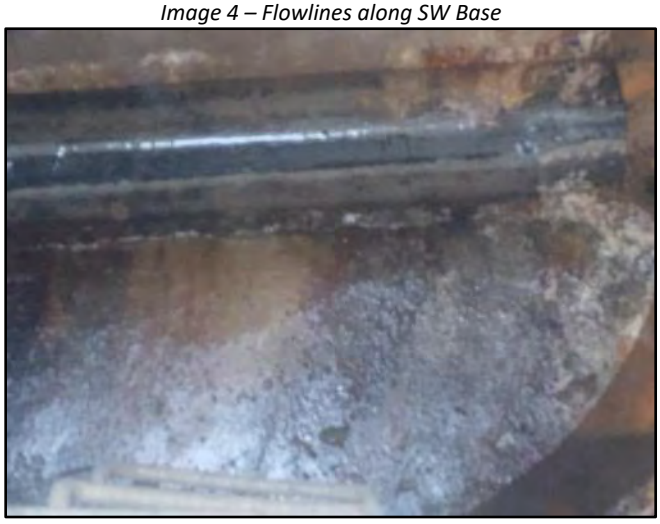

Image 6 – Moisture along West Shelf

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Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0016

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/3/2024 **Inspector(s): Dugan**

General Location Features: Front St & Easy St, Center of Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Influent / 8” / Ductile Iron	125.5”	1.5”
2.	North Influent / 8” / Ductile Iron	125.5”	1”
3.	West Effluent / 8” / Ductile Iron	126”	2.5”
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 3
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – 40”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/48”		Score – 1
Base: Height – 22”		Score – 4
Shelf: Type – Conc.		Score – 3
Steps: 9 Type: Metal		Score – 2

Influent Pipe Connection(s):
Both have solid grouting
Heavy mineralization, I&I on both sides of Southern connection, appears unrelated to connection
Grade score of 2

Effluent Pipe Connection(s):
Solid grouting, heavy mineralization
I&I present along North side of connection, appears unrelated to connection
Grade score of 2

Additional Comments:
- Flowlines / Mineralization descending from barrel / base joint along all sides
- Several drippers present near South, West, and North side

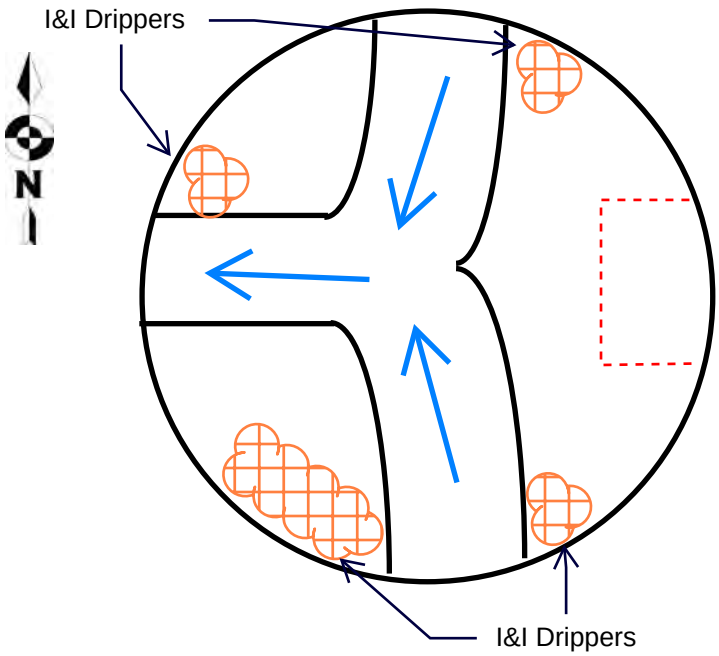

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Image 1 – MH facing West along Front St

Image 2 – Cover, Catchpan, and Frame

Image 3 – Barrel and Base

Image 4 – Dripper along South Section of Base

Image 5 – Dripper along North Connection

Image 6 – I&I atop West Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0017

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: Front St & I St, Center of Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Influent / 8” / Ductile Iron	137.5”	Unidentifiable
2.	South Influent / 8” / Ductile Iron	137.5”	Since Pipe
3.	East Influent / 8” / Ductile Iron	137.5”	System is
4.	West Effluent / 8” / Ductile Iron	137.7”	Sealed
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 4
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 72”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/9"		Score – 1
Cone: Height – N/A	Type –	Score –
Reducing Slab: Height – 72”		Score – 2
Barrel Sections: Number/Height – N/A		Score – 1
Base: Height – 62”		Score – 5
Shelf: Type – Conc.		Score – 3
Steps: 9 Type: Metal		Score – 3

Influent Pipe Connection(s):
Connections are highly mineralized due to submersion
Gasket exposed along South pipe
Graded score of 3

Effluent Pipe Connection(s):
Grouting missing along top of connection
Connection ties into crack with I&I gusher
Graded score of 4

Additional Comments:
- All pipes are closed & sealed within manhole, no pipe’s interior is visible
- Extremely heavy I&I with multiple gushers present along South and West portion of base
- Base is very corroded, likely experiences freeze/thaw damage as ice was present upon opening
- Unclear whether I&I enters the sealed pipes

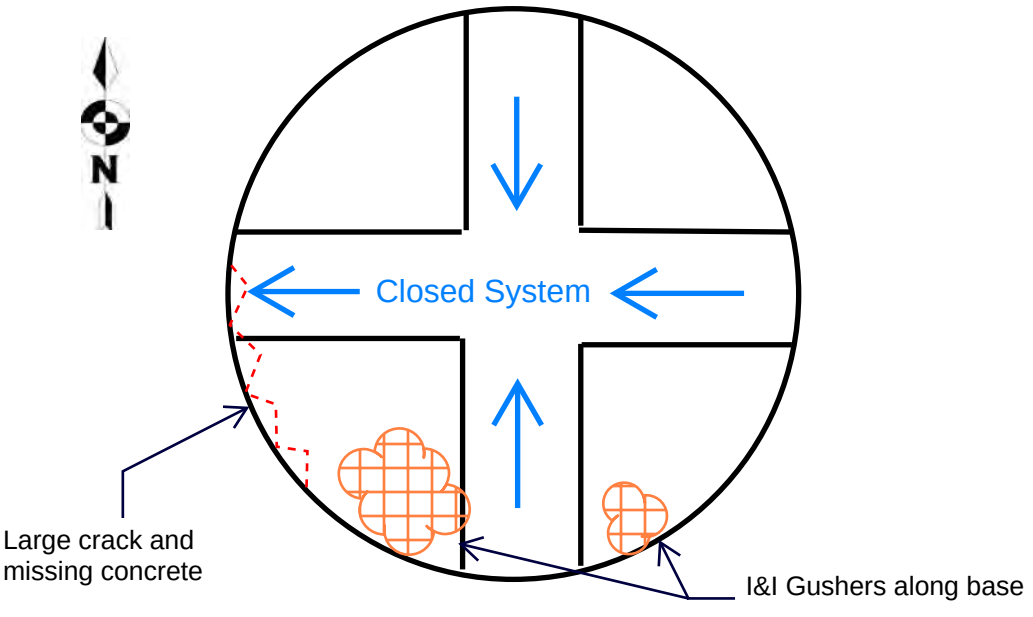

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Image 1 – MH facing West along Front St

Image 2 – Closed Pipe System

Image 3 – South Connection with Large Cracks and Heavy I&I

Image 4 – North Connection and Ice Chunks

Image 5 – East Connection

Image 6 – West Connection, Large Cracks

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0018

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: Front St & H St, Center of Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Influent / 8” / Ductile Iron	153”	Unidentifiable
2.	South Influent / 8” / Ductile Iron	153”	Since Pipe
3.	East Influent / 8” / Ductile Iron	153”	System is
4.	Southeast Influent / 6” / Ductile Iron	103”	Sealed
5.	Decommissioned North Influent / 8” / Ductile Iron	116”	No Flow
6.	West Effluent / 8” / Ductile Iron	153.2”	Sealed

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 4
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – 40”	Type –	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/72”		Score – 1
Base: Height – 60”		Score – 5
Shelf: Type – Conc.		Score – 3
Steps: 11	Type: Metal	Score – 2

Influent Pipe Connection(s):
Connections are highly mineralized due to submersion
Graded score of 2
Effluent Pipe Connection(s):
Pipe connection is eroded, but appear solid
Graded score of 2
Additional Comments:
- All pipes are closed and sealed within manhole, no pipe’s interior is visible
- Manhole’s volume refills at approximately 6 in / min (approx. 50 gpm)
- No obvious signs of I&I into the pipes
- Massive I&I gushers along SE and North side of base

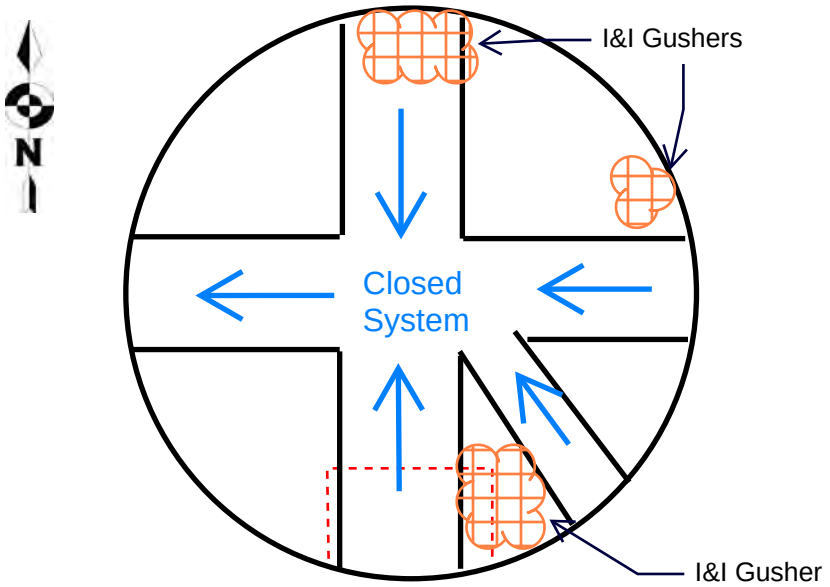

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Image 1 – MH facing West along Front St

Image 2 – Closed Pipe System

Image 3 – North Decommissioned Connection

Image 4 – North Connection with Massive Submerged Gusher

Image 5 – West Effluent Connection

Image 6 – Elevated Southeast 6" Influent Pipe

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0019

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: Front St & G St, West of Intersection in Adjoining Ditch

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	East Influent / 8” / Ductile Iron	152”	2”
2.	South Influent / 12” / Ductile Iron	153”	3”
3.	North Effluent / 12” / Ductile Iron	153.5”	4”
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 3
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 1
Frame: Height – 5”	Type – C.I.	Score – 3
Chimney: Number/Height – N/A		Score –
Cone: Height – 40”	Type –	Score – 2
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/24”, 1/48”		Score – 1
Base: Height – 24”		Score – 3
Shelf: Type – Conc.		Score – 3
Steps: 9	Type: Metal	Score – 1

Influent Pipe Connection(s):
Solid Grouting on South Influent
I&I and mineralization occurring along South end of East connection
Graded score of 2

Effluent Pipe Connection(s):
Pipe is rather exposed
I&I dripper along East side of connection
Graded score of 2

Additional Comments:
- Frame & Cone approximately 2” off-center from each other
- Both frame and cone are experiencing significant root intrusion
- I&I occurring around shelf, likely a product of poor connection seals
- Large crack in the shelf

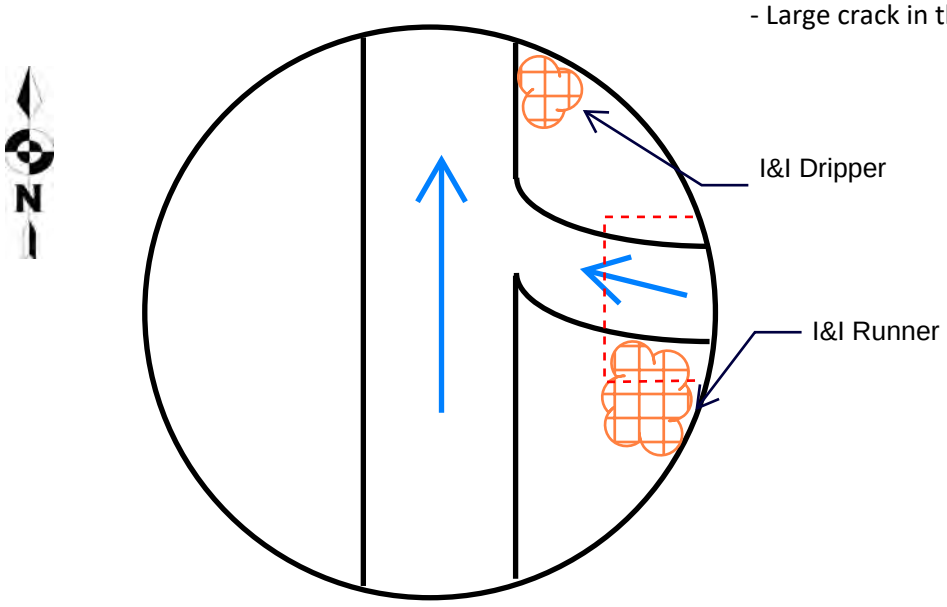

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Image 1 – MH facing North along G St

Image 2 – Frame & Cone, Offset and Root Intrusion

Image 3 – Cone, Barrels, and Base

Image 4 – Root Intrusion along Cone

Image 5 – I&I Runner along East Portion of Base

Image 6 – I&I Dripper and North Effluent Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0021

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/5/2024 **Inspector(s): Dugan**

General Location Features: Main & G St Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	West Influent / 8” / Ductile Iron	124.3”	1”
2.	South Influent / 12” / Ductile Iron	124.3”	3”
3.	North Effluent / 12” / Ductile Iron	124.5”	4”
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 3
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 2/6”		Score – 1
Cone: Height – 28”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/36”		Score – 1
Base: Height – 32”		Score – 5
Shelf: Type – Conc.		Score – 4
Steps: 7	Type: Metal	Score – 2

Influent Pipe Connection(s):
Decent grouting
Standing water on top of West Connection
Graded score of 3

Effluent Pipe Connection(s):
Decent grouting
Highly mineralized
Graded score of 2

Additional Comments:
- Mass quantities of I&I coming from joint between barrel and base
- Mineralization suggests that I&I is occuring along the entire circumference of the joint
- Mineralization present on every base surface area, up to approx. 1” thick

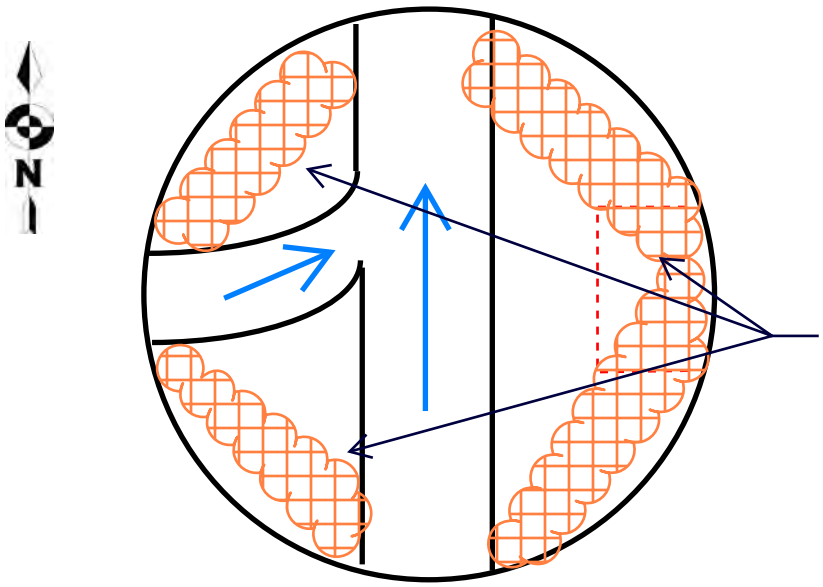

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Image 1 – MH facing South along G St

Image 2 – Barrel and Base

Image 3 – Standing Water along Base

Image 4 – South Influent Connection

Image 5 – West Influent Connection

Image 6 – North Effluent Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0022

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/5/2024 **Inspector(s): Dugan**

General Location Features: 200 ft South of H & Front St, in Front of Talkeetna Eastside Cabins

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Influent / 8” / Ductile Iron	111.3”	0.5”
2.	North Effluent / 8” / Ductile Iron	111.5”	0.5”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/4", 3/6”		Score – 1
Cone: Height – 40”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – 32”		Score – 2
Shelf: Type – Conc.		Score – 2
Steps: 5 Type: Metal		Score – 2

Influent Pipe Connection(s):
Solid grouting
Moderate solids build-up around connection
Graded score of 2

Effluent Pipe Connection(s):
Solid grouting
Graded score of 1

Additional Comments:
- Additional steps may be necessary for realistic accessibility
- Gradual offset between cone, chimney, and frame is approximately 2”
- Flowlines & mineralization along West end of shelf suggest I&I, difficult to determine in rainy conditions

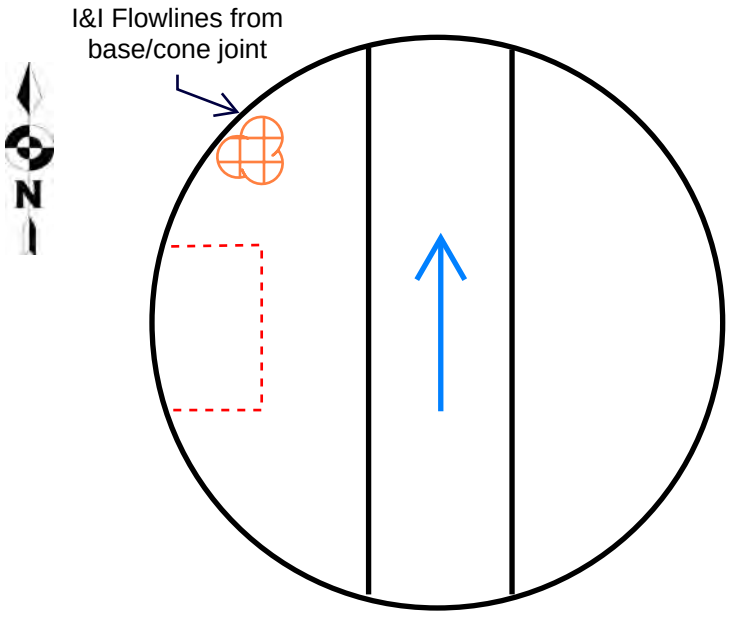

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Image 1 – MH facing South along H St

Image 2 – Frame, Cover, and Catchpan

Image 3 – Frame, Chimney, and Cone

Image 4 – Cone and Base

Image 5 – Flowlines along West End of Base

Image 6 – South Influent Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0023

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: 200 ft South of I & Front St, just North of the Curve in the Road

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Influent / 8” / Ductile Iron	96.5”	0.5”
2.	North Effluent / 8” / Ductile Iron	96.7”	0.5”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 3
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/6”		Score – 2
Cone: Height – 52”	Type – Ecc.	Score – 2
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – 22”		Score – 4
Shelf: Type – Conc.		Score – 4
Steps: 6	Type: Metal	Score – 2

Influent Pipe Connection(s):
Highly Mineralized
Pipe is pretty exposed
Graded score of 3

Effluent Pipe Connection(s):
Highly mineralized
Graded score of 2

Additional Comments:
- South pipe exits at SSW direction
- Most I&I appears to be coming from the Base / Cone
- Joint, especially along North, East, and South sections
- Missing concrete, crack, and dripper along West side of Effluent connection

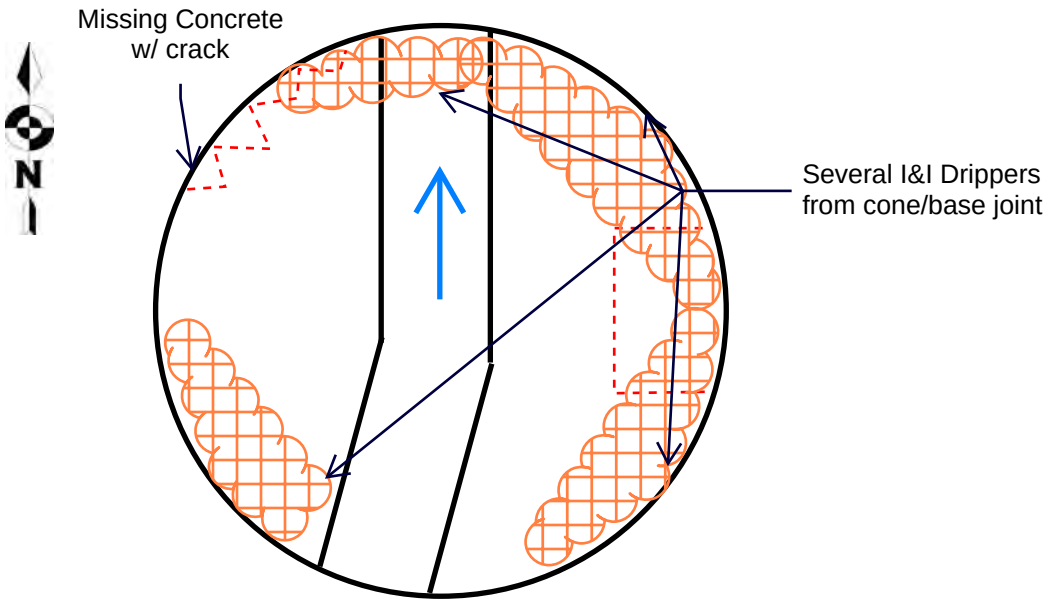

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Image 1 – MH facing South along I St

Image 2 – Frame, Cover, and Catchpan

Image 3 – Base and Cone

Image 4 – Missing Concrete and Dripper

Image 5 – South Influent Connection

Image 6 – North Effluent Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0024

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/3/2024 **Inspector(s): Dugan**

General Location Features: Along Easy St, in Front of 22100 S Easy St Driveway

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Influent / 8” / Ductile Iron	106.5”	1.5”
2.	North Effluent / 8” / Ductile Iron	106.7”	1.5”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – 28”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/36”		Score – 1
Base: Height – 22”		Score – 3
Shelf: Type – Conc.		Score – 3
Steps: 6 Type: Metal		Score – 2

Influent Pipe Connection(s):
Decent grouting
I&I Dripper along East side of connection
Graded score of 2

Effluent Pipe Connection(s):
Solid grouting
Graded score of 1

Additional Comments:
- Large crack along West side with I&I drippers present
- More I&I along East side, adjacent to North & South connections
- I&I appears to be a result of hairline cracks in the base

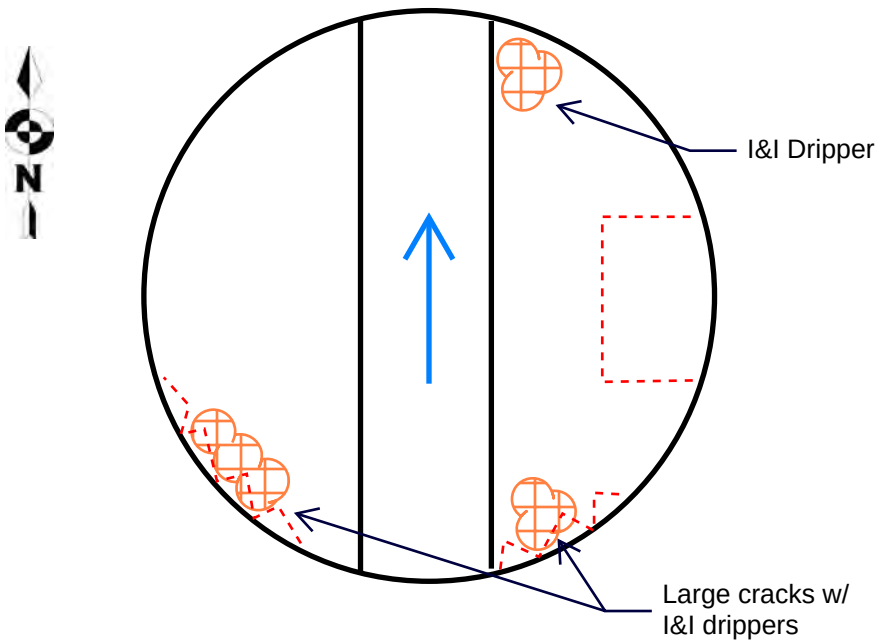

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Image 1 – MH facing South along Easy St

Image 2 – Frame, Stairs and Cone

Image 3 – Crack along West side of base

Image 4 – I&I along East side of Norh Connection

Image 5 – South Influent Connection

Image 6 – North Effluent Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0025

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: 200 ft North of 2nd & I St, just South of the Curve in I St

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Influent / 8” / Ductile Iron	96.8”	0.5”
2.	North Effluent / 8” / Ductile Iron	97”	0.5”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/6”		Score – 2
Cone: Height – 40”	Type – Ecc.	Score – 2
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – 36”		Score – 1
Shelf: Type – Conc.		Score – 1
Steps: 5	Type: Metal	Score – 1

Influent Pipe Connection(s):
Solid grouting
Graded score of 1
Effluent Pipe Connection(s):
Solid grouting
Graded score of 1
Additional Comments:
- Effluent Pipe exits in NNE direction
- Frame is offset approx. 1” from chimney
- Joints between frame/chimney and chimney/cone are facing significant root intrusion

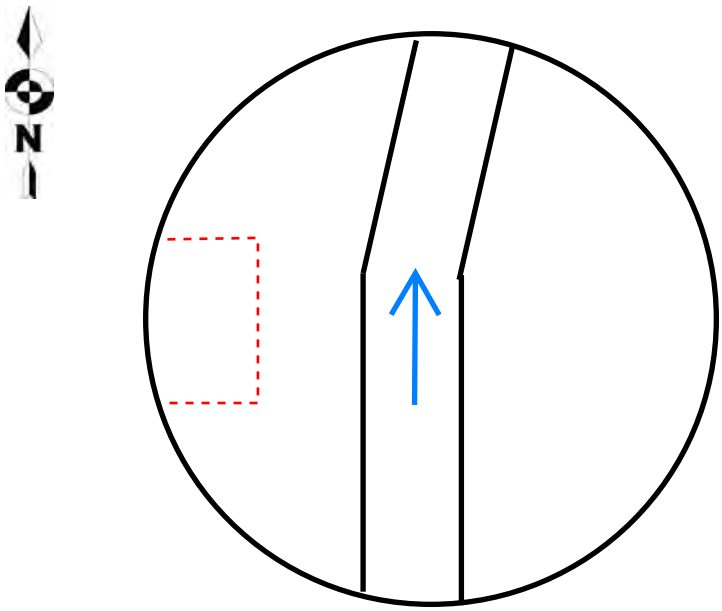

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Image 1 – MH facing North along I St

Image 2 – Cover and Frame

Image 3 – Roots at Structure's Joints

Image 4 – Base

Image 5 – South Influent Connection

Image 6 – North Effluent Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0026

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: 200 ft North of 2nd & I St, just South of the Curve in I St

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Effluent / 8” / Ductile Iron	66”	2”
2.			(Static Water)
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – 28”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – 24”		Score – 2
Shelf: Type – Conc.		Score – 2
Steps: 3	Type: Metal	Score – 1

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Solid grouting
Hairline crack along Eastern portion
Graded score of 2
Additional Comments:
- No Influent Pipe as pipe ends at South end in shear concrete wall
- Frame is offset approx. 1” from cone and base
- Mineralization present on West side of effluent connection coming from cone/base joint
- Large portion of static water in the pipe’s invert

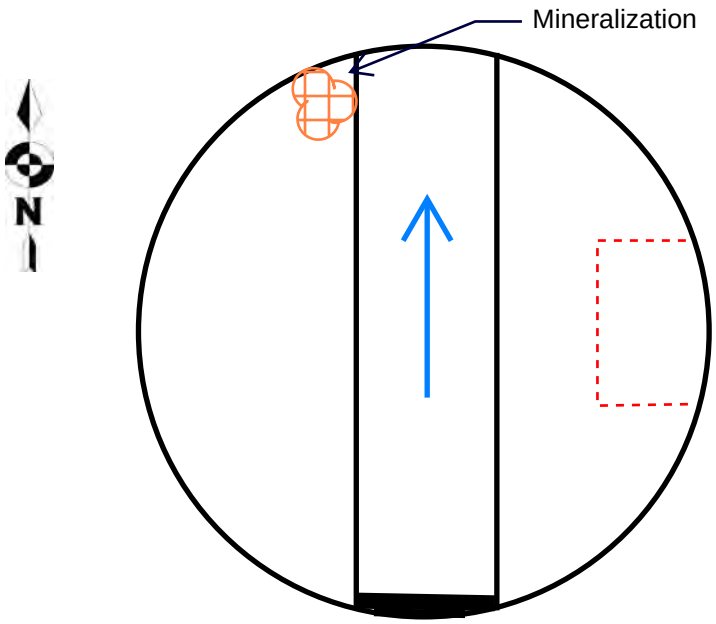

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Image 1 – MH facing South towards curve

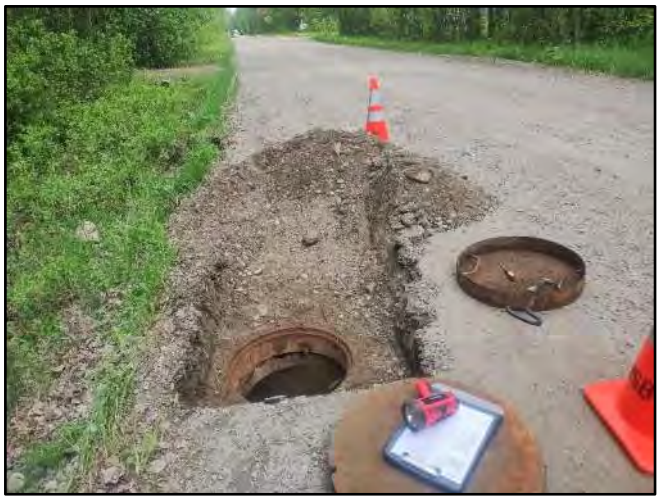

Image 2 – Cover, Catchpan, and Frame

Image 3 – Frame and Cone Offset

Image 4 – Base

Image 5 – Mineralization from Cone/Base Joint

Image 6 – North Effluent Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0027

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/5/2024 **Inspector(s): Dugan**

General Location Features: 200 ft South of G & First St, in Adjoining West Ditch

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Influent / 12” / Ductile Iron	141”	3”
2.	North Effluent / 12” / Ductile Iron	141.2”	3”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 3
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 2/6”		Score – 3
Cone: Height – 40”	Type – Ecc.	Score – 2
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/48”		Score – 1
Base: Height – 16”		Score – 3
Shelf: Type – Conc.		Score – 3
Steps: 8	Type: Metal	Score – 2

Influent Pipe Connection(s):
Solid Grouting
Highly mineralized along shelf, I&I on both sides
Graded score of 3

Effluent Pipe Connection(s):
Decent grouting
Highly mineralized
Graded score of 2

Additional Comments:
- First and Second Chimney are approx. 6” offset from one another
- Second chimney and base are approx. 2” offset
- Some root intrusion at chimney/cone joint
- Mineralization flowlines coming from barrel/base connection along East section
- Missing Concrete section to the East of influent connection

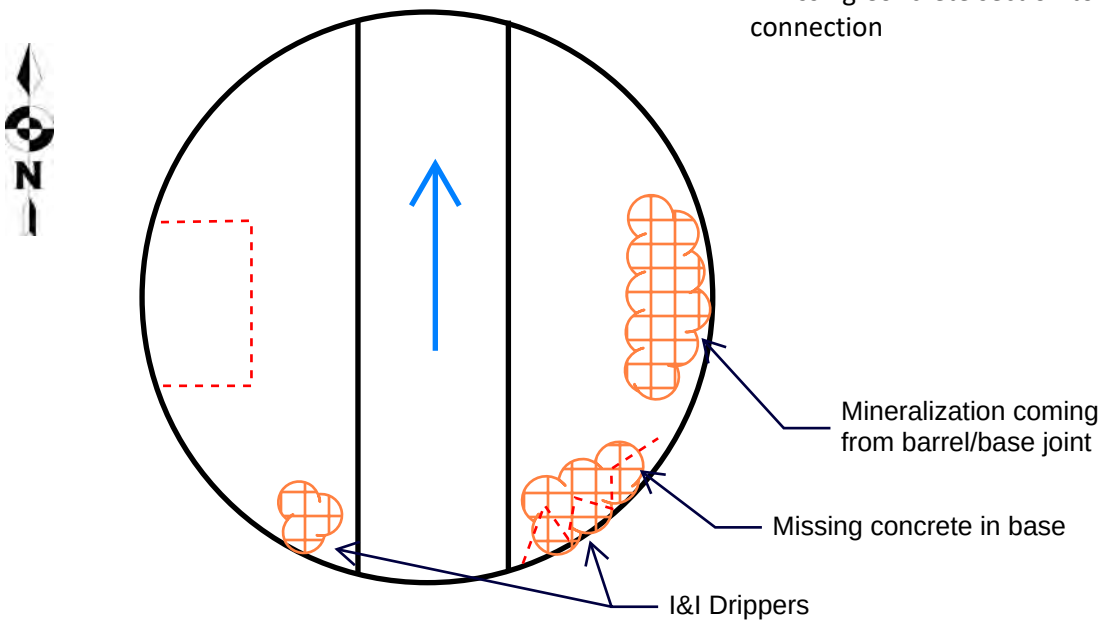

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Image 1 – MH facing North on G St

Image 2 – Frame, Chimney, and Cone Offset

Image 3 – Barrel and Base

Image 4 – Mineralization along East Side

Image 5 – Mineralization and Dripper near Influent Connection

Image 6 – Missing Concrete and I&I dripper

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0028

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/3/2024 **Inspector(s): Dugan**

General Location Features: 100 ft North of I & Second St

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	East Influent / 8” / Ductile Iron	69.3”	0.25”
2.	South Effluent / 8” / Ductile Iron	69.5”	0.25”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 3
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/6”		Score – 2
Cone: Height – 40”	Type – Ecc.	Score – 2
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – 18”		Score – 4
Shelf: Type – Conc.		Score – 3
Steps: 3 Type: Metal		Score – 2

Influent Pipe Connection(s):
Solid grouting
Light mineralization
Graded score of 1

Effluent Pipe Connection(s):
Decent grouting
Heavy mineralization
Multiple cracks extending from connection
Graded score of 3

Additional Comments:
- Chimney & frame offset: 1”
- Cone & chimney offset: 2”
- Base & cone offset: 1”
- Root intrusion along joints between frame, chimney, and cone
- Heavy mineralization and I&I along base/cone joint
- Large cracks on North and South of base, unclear whether I&I is from these cracks or joints

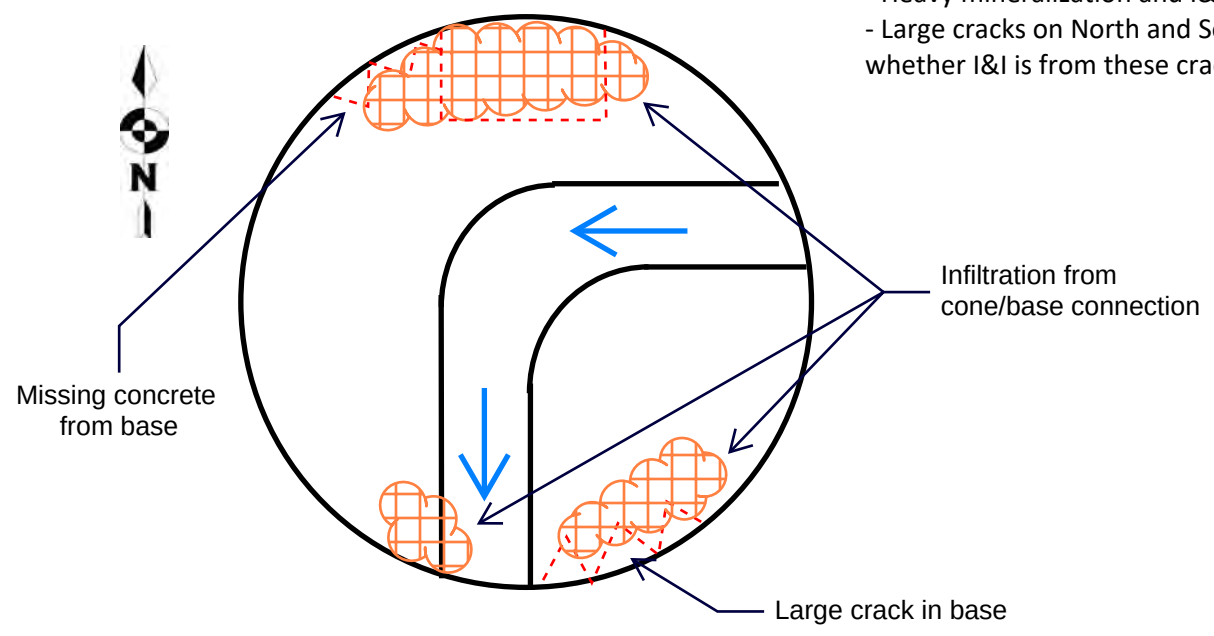

Image 1 – MH facing South on I St

Image 2 – Frame, Chimney, and Cone Offset

Image 3 – Cone and Base Offset

Image 4 – Base

Image 5 – I&I along South Effluent

Image 6 – I&I along North Base

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0029

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/6/2024 **Inspector(s): Dugan**

General Location Features: Directly North of FAA Facility, 100 ft West of Second St

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	West Effluent / 8” / Ductile Iron	75.5”	No Flow
2.			
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 1
Frame: Height – 5”	Type – C.I.	Score – 1
Chimney: Number/Height – 1/6”		Score – 2
Cone: Height – 28”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – N/A		Score –
Base: Height – 18”		Score – 3
Shelf: Type – Conc.		Score – 3
Steps: 4	Type: Metal	Score – 1

Influent Pipe Connection(s):
N/A
Effluent Pipe Connection(s):
Solid grouting
Some solids build-up
Graded score of 2
Additional Comments:
- No Influent as East pipe ends in a shear wall
- Chimney & cone are 4” off-center
- Root intrusion at base/cone joint
- Mineralization present along the South section of base

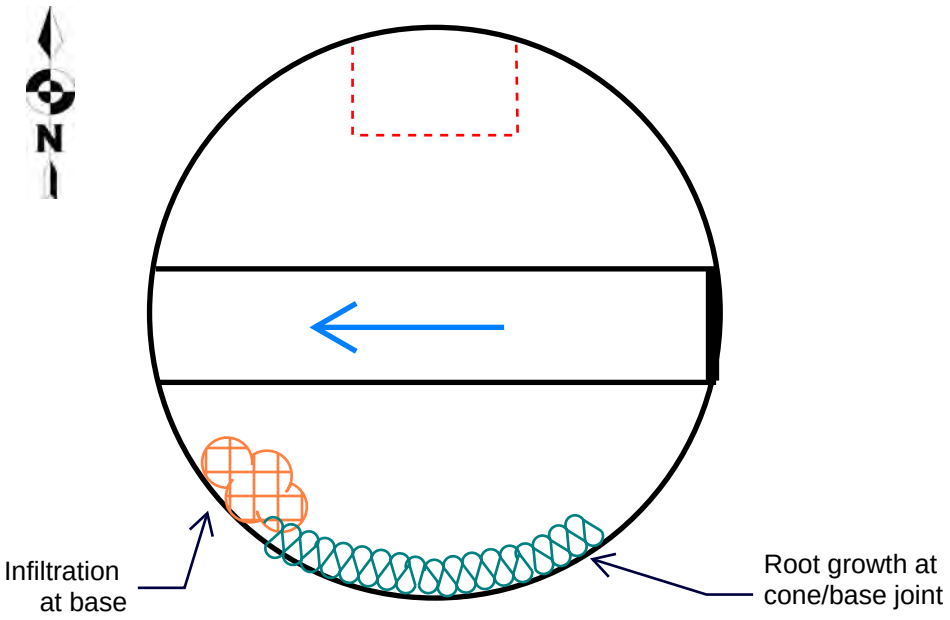

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Image 1 – MH facing South to FAA Facility

Image 2 – Cover, Catchpan, and Frame

Image 3 – Chimney and Cone Offset

Image 4 – Cone and Base

Image 5 – Root Intrusion at Cone/Base Joint

Image 6 – West Effluent Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0030

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/1/2024 **Inspector(s): Dugan**

General Location Features: I St & Second Ave Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Influent / 8” / Ductile Iron	98.3”	0.25”
2.	West Effluent / 8” / Ductile Iron	98.5”	0.5”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 4
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 1/6”		Score – 1
Cone: Height – 40”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/12”		Score – 2
Base: Height – 18”		Score – 5
Shelf: Type – Conc.		Score – 5
Steps: 5	Type: Metal/Poly	Score – 1

Influent Pipe Connection(s):
Pipe is protruding and exposed
Extremely mineralized
Large amounts of I&I adjacent, likely related
Graded score of 3

Effluent Pipe Connection(s):
Decent grouting
Extremely mineralized
Graded score of 2

Additional Comments:
- Very heavy I&I along base directly at shelf
- Concrete shelf is eroding, cracking, and collecting debris
- Heaviest infiltration and standing water along East side of base

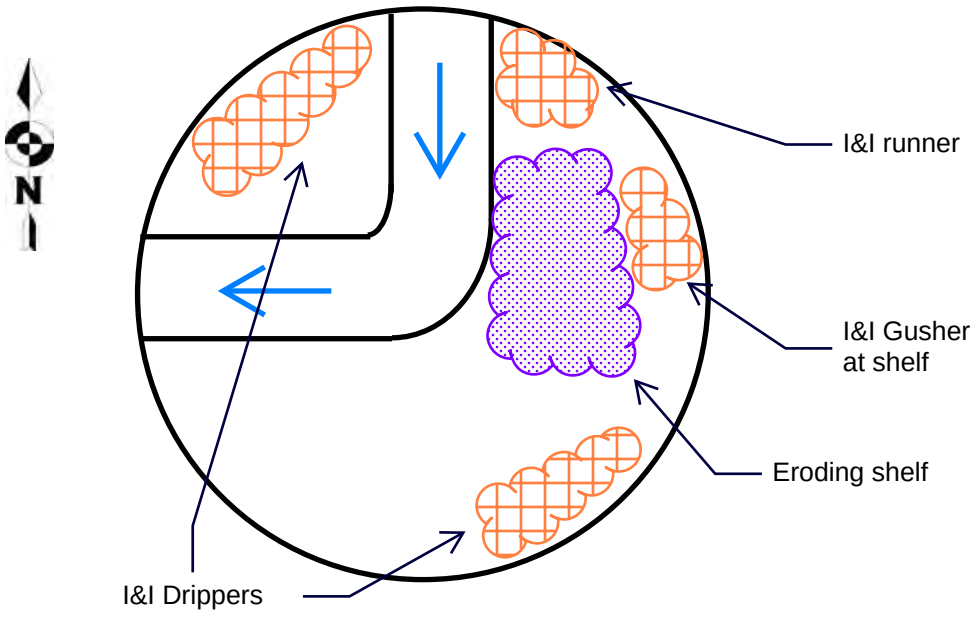

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Image 1 – MH facing South towards Talkeetna Airstrip

Image 2 – Cover and Frame

Image 3 –Base

Image 4 – Influent Pipe Connection

Image 5 – Effluent Pipe Connection

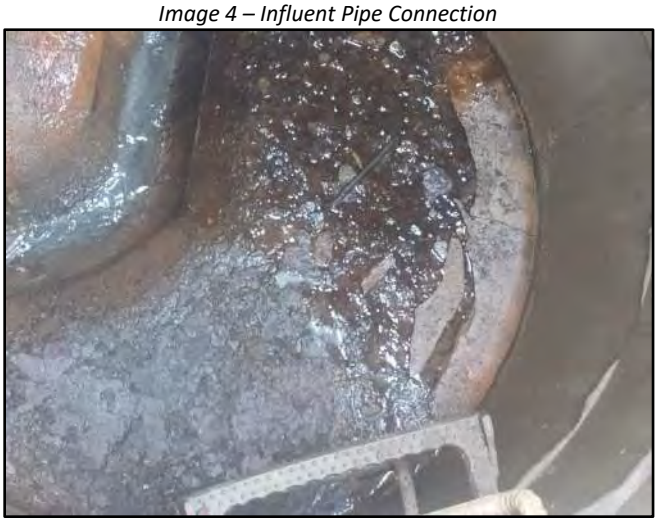

Image 6 – I&I Gusher and Eroding Shelf

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Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0031

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/1/2024 **Inspector(s): Dugan**

General Location Features: Along Second St, between G & I St

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	East Influent / 8” / Ductile Iron	108.5”	1.5”
2.	West Effluent / 8” / Ductile Iron	108.7”	1.5”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 3
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 4
Frame: Height – 5”	Type – C.I.	Score – 3
Chimney: Number/Height – 1/6”		Score – 4
Cone: Height – 40”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/12”		Score – 1
Base: Height – 32”		Score – 2
Shelf: Type – Conc.		Score – 2
Steps: 6 Type: Metal/Poly		Score – 1

Influent Pipe Connection(s):
Solid grouting
Graded score of 1
Effluent Pipe Connection(s):
Solid grouting
Some mineralization above at the joint
Graded score of 2
Additional Comments:
- Cover/Lid has permanently attached to frame and separated frame along the top seam
- Chimney and frame have 4” offset from cone
- Chimney section is experiencing significant cracking
- Evidence of I&I along joint between barrel and base

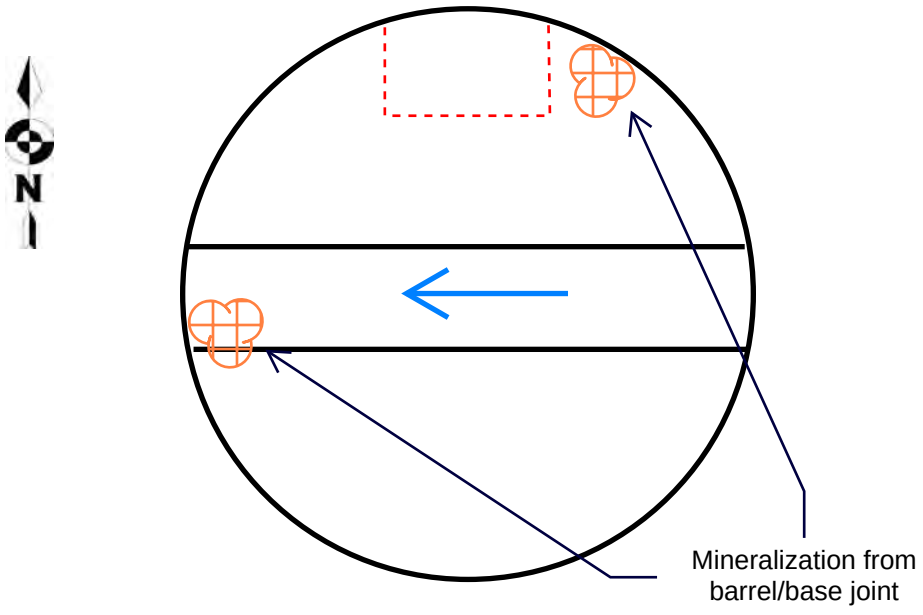

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Image 1 – MH facing East along Second St

Image 2 – Cover and Frame Attached

Image 3 –Chimney and Cone Offset

Image 4 – Chimney Cracking

Image 5 – Mineralization and Influent Connection

Image 6 – I&I Mineralization and Effluent Connection

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0032

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 5/31/2024 **Inspector(s): Dugan**

General Location Features: 50 ft Southeast of Second and G St Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	East Influent / 8” / Ductile Iron	127.3”	1”
2.	South Influent / 8” / Ductile Iron	127.3”	Minimal
3.	West Effluent / 8” / Ductile Iron	127.5”	1”
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 1
Frame: Height – 5”	Type – C.I.	Score – 1
Chimney: Number/Height – 2/6”		Score – 2
Cone: Height – 40”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/36”		Score – 2
Base: Height – 22”		Score – 3
Shelf: Type – Conc.		Score – 3
Steps: 6 Type: Metal		Score – 1

Influent Pipe Connection(s):
Decent grouting
Both South and East connection have significant mineralization and damage
Graded score of 3

Effluent Pipe Connection(s):
Solid grouting
Graded score of 1

Additional Comments:
- Chimney, frame, and cone are approximately 2” offset in total
- Joint between barrel and base has multiple drippers and mineralization
- Southwest portion of base features some cracking
- Standing water/sludge on the North side of shelf

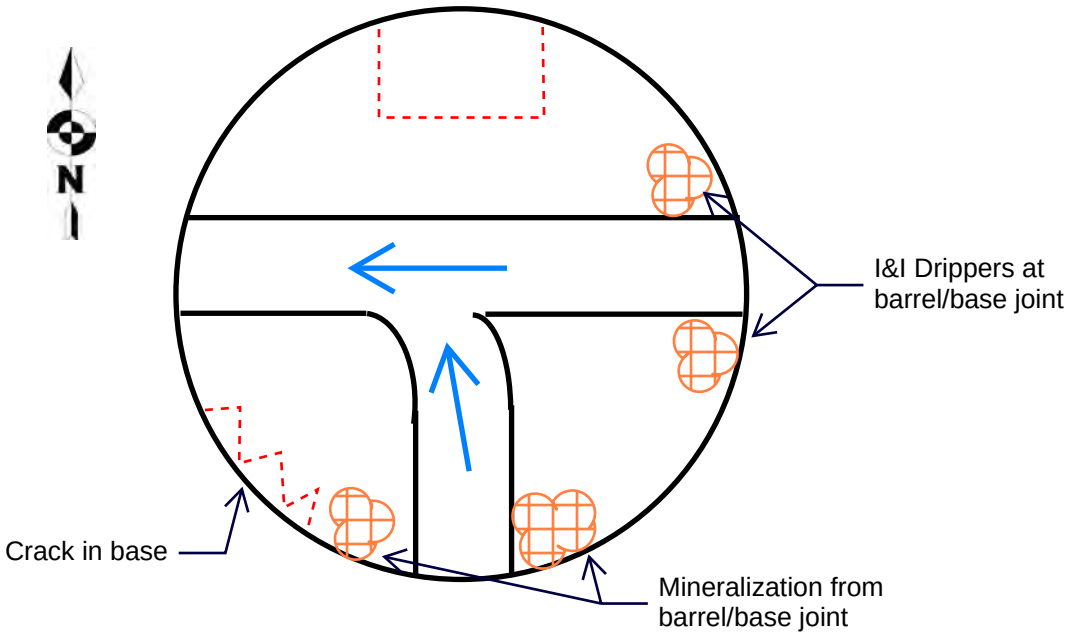

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Image 1 – MH facing West along Second St

Image 2 – Frame and Chimney

Image 3 –I&I Drippers above East Influent Connection

Image 4 – West Effluent Connection

Image 5 – I&I Drippers and South Influent Connection

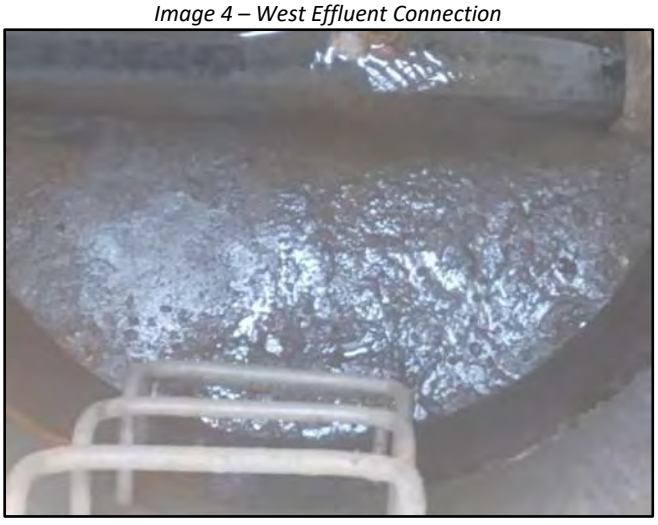

Image 6 – Standing Water on Shelf

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0033

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 5/31/2024 **Inspector(s): Dugan**

General Location Features: Second & G St, South of Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	West Influent / 12” / Ductile Iron	109.8”	4”
2.	East Influent / 8” / Ductile Iron	108”	2”
3.	North Effluent / 12” / Ductile Iron	110”	4”
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 3
Chimney: Number/Height – N/A		Score –
Cone: Height – 40”	Type – Ecc.	Score – 2
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/36”		Score – 1
Base: Height – 18”		Score – 2
Shelf: Type – Conc.		Score – 3
Steps: 7 Type: Metal		Score – 2

Influent Pipe Connection(s):
Solid grouting
Graded score of 1
Effluent Pipe Connection(s):
Solid grouting
Some mineralization along East side of connection
Graded score of 2
Additional Comments:
- Frame has shifted 6” off-center from cone
- Joint between frame and cone is experiencing major root intrusion
- Sludge and solids present on Southern section of shelf, high mineralization suggests I&I

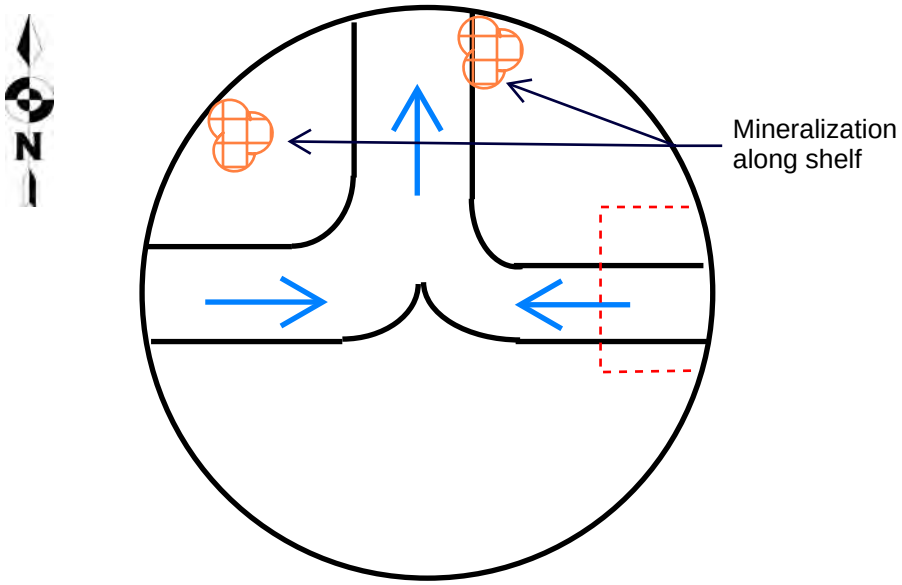

Image 1 – MH facing North on G St

Image 2 – Frame and Cone Offset

Image 3 –Base

Image 4 – Mineralization on Southern Shelf

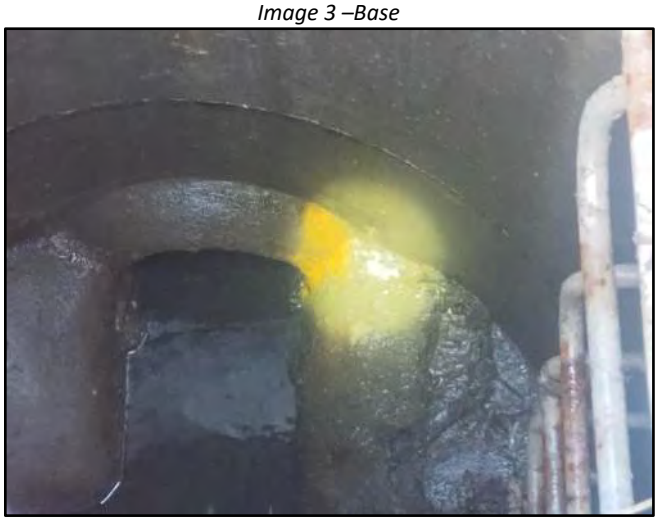

Image 5 – West Effluent Connection and Stairs

Image 6 – Root Intrusion along top of Cone

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0034

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: 150 ft North of I & Front St Intersection, 10 ft East of Greenhouse

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	North Influent / 8” / Ductile Iron	107”	1”
2.	South Effluent / 8” / Ductile Iron	107.2”	1”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 6”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – 40”	Type – Ecc.	Score – 2
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/24”		Score – 1
Base: Height – 28”		Score – 3
Shelf: Type – Conc.		Score – 2
Steps: 7 Type: Metal		Score – 2

Influent Pipe Connection(s):
Solid grouting
Minor mineralization along West side
Graded score of 1

Effluent Pipe Connection(s):
Solid grouting
Crack and missing concrete along South end
I&I Dripper and mineralization coming from crack
Graded score of 2

Additional Comments:
- MH is unmarked on utility map
- Top metal stairs are experiencing some weathering

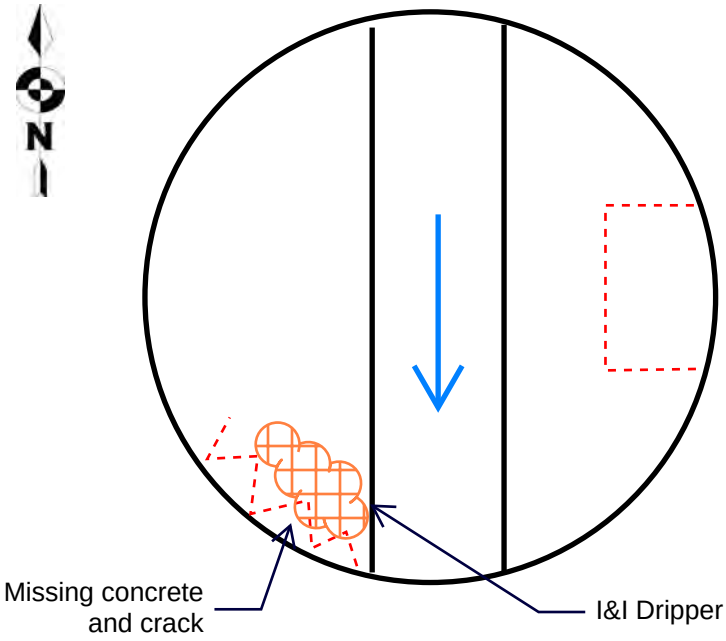

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Image 1 – MH facing South on I St

Image 2 – MH facing towards Green House

Image 3 –Frame, Cone, Barrels, and Steps

Image 4 – Base

Image 5 – North Influent Connection

Image 6 – South Effluent Connection and I&I Dripper

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0035

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/5/2024 **Inspector(s): Dugan**

General Location Features: G & First St Intersection

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Influent / 12” / Ductile Iron	122”	3”
2.	North Effluent / 12” / Ductile Iron	122.5”	3”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – 2/6”		Score – 2
Cone: Height – 28”	Type – Ecc.	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/36”		Score – 1
Base: Height – 30”		Score – 3
Shelf: Type – Conc.		Score – 3
Steps: 7	Type: Metal	Score – 1

Influent Pipe Connection(s):
Solid Grouting
Significant mineralization
Graded score of 2

Effluent Pipe Connection(s):
Solid Grouting
Heavy mineralization
Graded score of 2

Additional Comments:
- Chimney layers are facing moderate root intrusion
- Large diagonal cracks in the base along East section
- I&I appears to come from the barrel/base joint, not from the cracks
- Mineralization from joint is present along North end of base

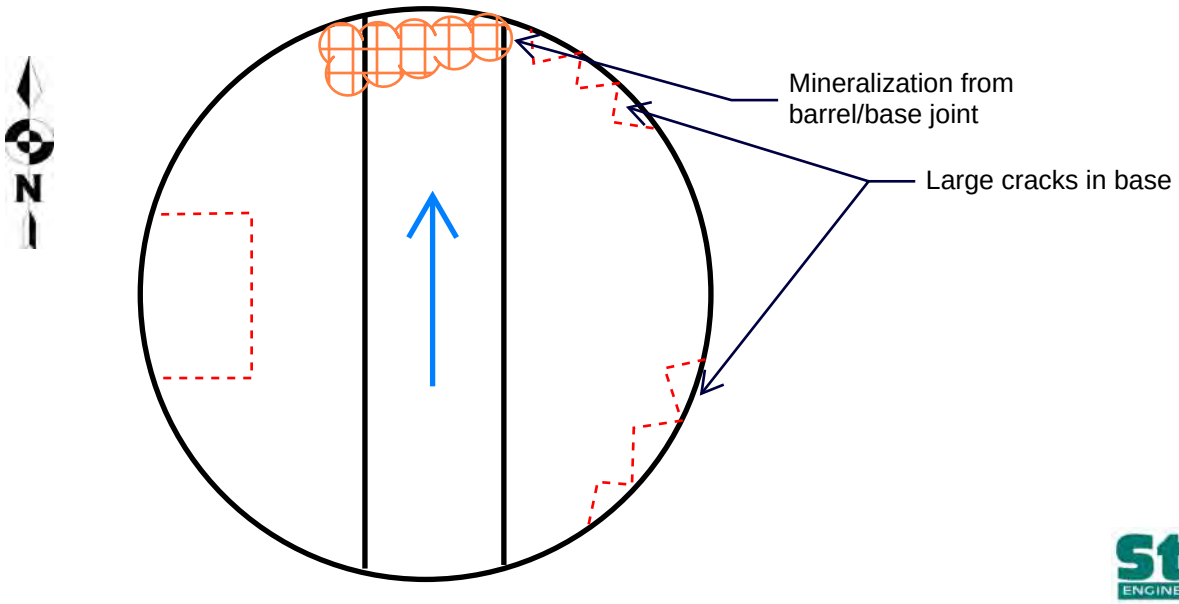

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Image 1 – MH facing East on First St

Image 2 – Frame, Chimney, and Stairs

Image 3 –Large crack in Base

Image 4 – Large Crack in Base pt. 2

Image 5 – Root Intrusion along Chimney

Image 6 – Mineralization from Barrel/Base Joint

Talkeetna Sewer Condition Assessment

SEWER STRUCTURE INSPECTION REPORT

Structure #: MH19-0036

DATE, INSPECTOR(S), & LOCATION DATA

Date of Inspection: 6/4/2024 **Inspector(s): Dugan**

General Location Features: 200 ft North of G & Front St, in the West Ditch along G St

PIPE CHARACTERISTICS

	In-Effluent Pipe Size/Type/Diameter	Rim to Invert	Depth of Flow
1.	South Influent / 12” / Ductile Iron	161.8”	4”
2.	North Effluent / 12” / Ductile Iron	162”	4”
3.			
4.			
5.			
6.			

MANHOLE CHARACTERISTIC

***Defect grades**: 0=No defect, 1=Minor Defect, 2=Minor to moderate Defect, 3=Moderate defect, 4=Significant defect, 5=Most significant defect*

Overall Structural Condition: Score – 2
Material of Construction: Concrete
Manhole Shape: Circular
Dimensions: 48”

Cover/Lid: 25”	Type – C.I.	Score – 2
Frame: Height – 5”	Type – C.I.	Score – 2
Chimney: Number/Height – N/A		Score –
Cone: Height – 28”	Type –	Score – 1
Reducing Slab: Height – N/A		Score –
Barrel Sections: Number/Height – 1/36”, 1/48”		Score – 3
Base: Height – 34”		Score – 1
Shelf: Type – Conc.		Score – 1
Steps: 9	Type: Metal	Score – 2

Influent Pipe Connection(s):
Solid Grouting
Graded score of 1
Effluent Pipe Connection(s):
Solid Grouting, Light Mineralization
Graded score of 2
Additional Comments:
- All I&I appears to occur at the joint between the two barrels, especially along the East side
- More steps may be necessary for realistic MH access

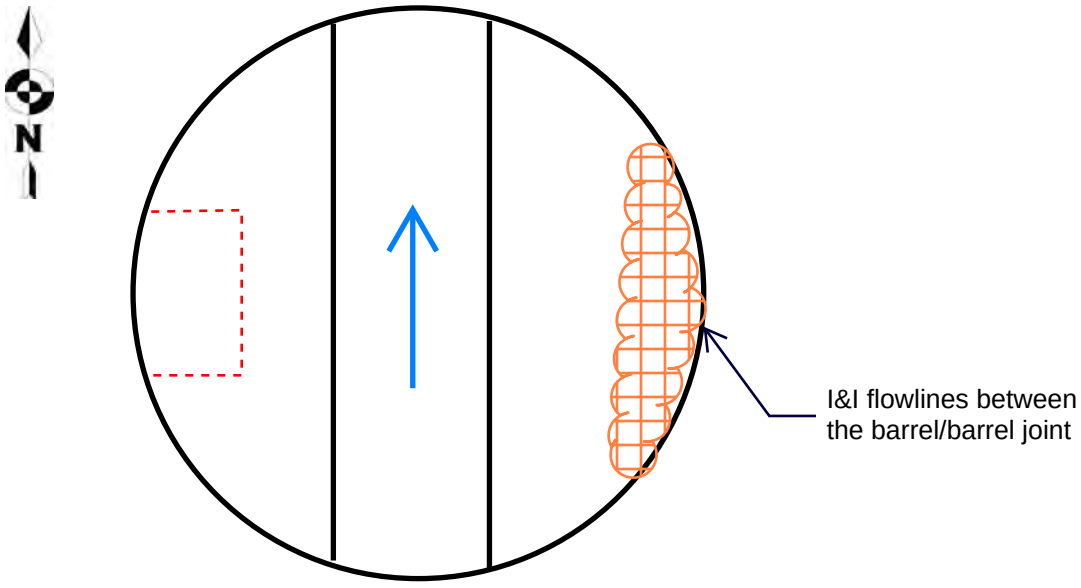

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Image 1 – MH facing North along G St

Image 2 – Cover & Frame

Image 3 – Barrels and Base

Image 4 – Mineralization from Barrel/Barrel Joint

Image 5 – South Influent Connection

Image 6 – North Effluent Connection